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# CIRCULATORY FAILURE IN ACUTE INFECTIOUS DISEASES*

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SHREVEPORT

Since newer and more efficient agents for treating the acute infections have been recently added to the physician's therapeutic armamentarium, it becomes necessary that he re-examine his ability to prolong life long enough for these agents to produce their curative action. All supportive aid possible must be given to prevent the breakdown or failure of some part or organ of the body before a cure is effected by the more specific treatment.

Circulatory failure not infrequently occurs under the added burden of a severe infection.

## NORMAL RESPONSE OF BODY TO FEVER

The toxins of infecting organisms upset the heat balancing mechanism of the body. They reduce heat loss by initial vasoconstriction whereby normal heat loss by radiation and by convection is prevented and they directly stimulate the centers which increase heat production. With vasoconstriction of the skin capillaries, the cutaneous sense organs are not bathed by the warm blood from the deeper organs. The patient experiences a chill or chilly sensations. Later, the heat control centers respond and vasodilatation occurs. The skin warms up, becomes flushed, and the patient experiences the sensation of being too hot. Continued fever is due chiefly to a raised threshold for heat loss.

The advent of fever is accompanied by an increase in metabolism. The increase in oxygen consumption is taken care of by an increase in cardiac output, which is at first brought about by an increase in heart rate (sinus tachycardia). As the fever increases, the cardiac output falls and the proportion of arterial blood used during each circuit through the capillaries is increased. The heart rate is also reflexly accelerated by vascular dilatation.

Fever of acute infections affects the blood pressure very little. A slight variation in either direction is normally found. Fever causes an initial decrease of circulatory blood volume due to water loss. There is, however, a gradual shift of water from the tissues to the vessels, which tends to increase the circulatory blood volume.

## TYPES OF CIRCULATORY FAILURE IN ACUTE INFECTIOUS DISEASES

Circulatory failure in acute infectious diseases is always one of three types: heart failure, peripheral circulatory failure, or a combination of these. Since a normal, healthy heart practically never fails during an acute infectious disease, except in diphtheria and rheumatic fever, the most frequent type of circulatory failure is the peripheral type. However, it is of the greatest importance to determine the type of failure in each case.

## HEART FAILURE

Electrocardiograms taken during infectious diseases have revealed myocardial damage hitherto unsuspected. In most instances these electrocardiographic changes, caused by toxic products, revert to normal

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after complete recovery. A previously diseased heart fails because its already impaired function is further impaired by the increased burden that acute infection places upon it. Thus, the heart is required to increase greatly its work in the face of toxic damage superimposed upon an already diseased myocardium. In pneumonia and pertussis there is the additional factor of myocardial anoxemia produced by impaired aeration of the blood due to loss of much capillary space in the diseased lung. There is also the additional factor of increased muscular effort necessary to pump the blood through this diseased organ.

The clinical picture produced by heart falure of this type is one familiar to all. The symptoms of either right-sided failure with engorgement of the systemic veins, or left heart failure with engorgement of the pulmonary circulation, may predominate. The pulse is rapid, often weak. It must be cautioned, however, that the rapid, feeble pulse accompanied by distant heart sounds is more characteristic of peripheral circulatory failure. Arrhythmias may occur, but are usually transitory. Heart block is rare except in diphtheria. The respirations are increased out of proportion to the fever. There is cyanosis, which may be of a grayish hue if the heart failure is accompanied by peripheral circulatory failure. The apex beat is weak, or diffuse, and may be impalpable. The heart is enlarged to the right or left and systolic murmurs may develop due to the relative insufficiency of the auriculoventricular orifices. The blood pressure is usually depressed and the electrocardiogram reveals evidence of failure not otherwise manifested. More infrequent findings are those of substernal oppression, pitting edema, cardiac pain, and swelling of the superficial veins and liver. Gallop rhythm is a certain sign of heart failure.

### TREATMENT OF HEART FAILURE

In the treatment of heart failure in acute infectious diseases the first responsibility is to prevent it. Prevention and active treatment are best carried out by careful attention to general measures:

(1) Rest: This includes early and late rest in all acute infections where one can anticipate myocardial damage or where one has been able to detect early circulatory embarrassment.

(2) The administration of ample antitoxic agents.

(3) Adequate oxygen supply: Oxygen should not be withheld until anoxemia has caused damage to the myocardium and other organs.

(4) Adequate nutrition: It is especially necessary to supply an abundance of carbohydrate and protein. The old so-called "starvation diet" of typhoid fever is an outstanding example of damage wrought by malnutrition.

(5) The administration of glucose and physiologic saline solutions to combat dehydration.

Glucose has a definite, beneficial effect on myocarditis. Several injections may be given initially in doses of 20 grams of 50 per cent solution intravenously, supplemented by insulin. Thereafter, a 10 per cent solution of glucose with normal saline is given to supply needed fluids.

In cardiac emergencies adrenalin is the most reliable drug. However, it must be remembered that vasoconstrictor drugs, such as adrenalin, caffein, ephedrine, camphor in oil, and posterior pituitary, are of no value as permanent circulatory stimulants and their action is not nearly so effective as the other more general measures.

Digitalis is indicated only when evidence of congestive failure is present. It is of doubtful value in acute heart failure.

Strychnine is no longer believed to be of any value whatsoever.

Perla and Marmorston used suprarenal cortical hormone in treating 17 cases of bronchopneumonia, one case of malaria, and six cases of grippal infection. They concluded that the apparent effects were "the maintenance of normal blood pressure with prevention of collapse, a decrease in the evidence of toxicity, avoidance of distention, an improvement of appetite, an increase in the sense of well-being, and an apparent shortening of the period of convalescence."

PERIPHERAL CIRCULATORY FAILURE

Peripheral circulatory failure produces a clinical state known as shock. More is known about what happens in shock than is known about the cause of it. There is generalized vasoconstriction of the arterioles and venules throughout the body. The blood is trapped in the peripheral circulation, the capillaries are congested, and the vascular bed is greatly increased. There is increased permeability of the capillaries with leakage of plasma into the tissues, including the viscera and the skin. This results in a loss of circulating blood volume, in a decrease in cardiac output, in a lowered blood pressure, and in a decreased rate of blood flow. Hemoconcentration, increased blood potassium, and other chemical alterations of the blood occur.

The effective venous pressure is lowered, although the venous pressure in surgical shock is variously reported both increased and decreased.

Much study of peripheral circulatory failure in the acute infections is needed. While the symptoms simulate those of traumatic shock, the pathologic physiology involves other factors, such as generalized toxic tissue damage. It has already been stated that this is the most common type of circulatory failure in acute infections. The clinical picture is presented by examination of the peripheral circulation. The patient in such a state of shock has a severe infection and is restless. The skin is cold, sweaty, and there is a grayish cyanosis due to skin pallor. Only the rectal temperature is reliable. The superficial veins are collapsed. The lowered venous pressure can be estimated by observing the distance above the heart at which the veins of the hands collapse. One should determine also whether the veins of the extremities fill, and with what rapidity, when a tourniquet is applied. There is neither dyspnea nor orthopnea, although there may be rapid breathing. The radial pulse is fast, weak, or thready, and examination of the digital pulse by palpation and by direct inspection of the nail bed and the finger tips with a flash light, reveals the absence of capillary pulsations. The arterial blood pressure is low and systolic sounds on auscultation over the femoral and brachial vessels are absent. This above picture is in marked contrast to that of a patient with infection, high fever, and vasodilatation in which the increased cardiac output is manifested by a warm, flushed skin, by a full bounding pulse, by capillary pulsations, by systolic sounds over the brachial and femoral vessels, and by rapidly filling veins when a tourniquet is applied.

Occasionally in acute infections due to an exaggerated response of the body to fever, there is a peripherally dilated arterial bed with a moderately low blood pressure. One should not confuse such a picture with peripheral circulatory failure.

In addition, the physician should constantly bear in mind that circulatory failure may be both cardiac and peripheral failure.

TREATMENT OF CIRCULATORY FAILURE

The treatment of peripheral circulatory collapse consists essentially in relieving pain, in the application of external heat, in the administration of oxygen, in the replenishing of fluid loss due to a depleted circulatory system, in transfusions, and in other special procedures for the correction of the pathologic physiology.

Glucose and normal saline should be given intravenously. Transfusions increase venous return by filling the vascular tree. Whole fresh blood is superior to preserved blood or to old preserved blood plasma. However, recent clinical and experimental work tends to show that the administration of concentrated plasma may be the best means of overcoming oligemia. It has been demonstrated that hemolyzed blood causes vasoconstriction and that many products of deterioration in preserved blood are toxic.

Digitalis is ineffective and, in fact, contraindicated, because it tends to decrease circulating blood volume. Strychnine, coramine, and caffein are also harmful.

Paredrine and paredrinol have been shown to increase blood pressure. Altschule and Iglauer demonstrated that in a normal man paredrine had a prolonged pressor action,

did not increase cadiac output, and did not cause psychic stimulation. Stead and Ebert observed the effect of paredrinol on ten patients with infectious diseases, eight from acute infectious diseases and two from miliary tuberculosis and found little improvement. Since they found paredrinol beneficial in circulatory collapse due to hemorrhage, they concluded that its failure in collapse due to infectious diseases was due to the combination of factors causing this different type of collapse and not to simple blood loss.

The function of the suprarenal cortex has been shown to be diminished in the course of infections. The use of suprarenal cortical extract in the treatment of acute infectious diseases by Perla and Marmorston has already been referred to under the treatment of heart failure. However, Scudder has reported considerable success in the treatment of surgical shock using eschatin (suprarenal cortical extract) and hypertonic sodium chloride solution.

## SUMMARY

Circulatory failure in acute infectious diseases is of three types: heart failure, peripheral circulatory failure and a combination of these.

It is of extreme importance to determine the exact type of failure since the treatment varies in each type. The treatment of heart failure consists essentially in careful attention to general measures, in the administration of glucose, and possibly in the use of suprarenal cortical hormone. The treatment of peripheral circulatory failure consists of measures to replenish the fluid loss in the system and of other special procedures for correcting the abnormal physiology.

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## DISCUSSION

Dr. M. D. Hargrove (Shreveport): Dr. Bender has discussed an important subject, namely the types of heart failure that occur in infections, particularly infectious diseases. One of the most important points is to be able to differentiate between the two types of failure that may occur. As he said, it may be central or peripheral, and the essential point is to be able to differentiate between these two because the treatment is so radically different.

One picture is that of shock. There is not actual blood loss and in so far as I know, studies of blood volume in infectious diseases have not shown any great variation from normal. The exact mechanism involved in the production of the picture is uncertain. It may be due to toxic substances acting on the capillaries or to anoxemia. Regardless of the cause, the picture is one of peripheral circulatory failure, and the treatment should be directed accordingly and not to the heart.

In the course of acute and infectious diseases, actual cardiac damage occurs rather infrequently with few exceptions. It is true that electrocardiographic examinations of patients with infectious diseases will show some changes, particularly in the T wave, but these are usually reversible. One might conclude that the damage is in the nature of a toxic reaction which ordinarily reverts to normal. Diphtheria is one of the exceptions, in that frequently serious myocardial disease may result therefrom. One should always remember this fact and be sure to give the patient adequate rest in order to protect his heart. Frequently though, even in diphtheria, the evidences of heart damage present during the course of the disease will revert to normal.

Recognizing that there may be these types of circulatory failure, it seems that the best approach to prevention, is in energetic and adequate treatment of infectious diseases and infections before there has been time for these changes to occur. The adequate use of antitoxins and the sulfanilamide group should help to avoid serious cardiac damage.

Dr. J. H. Musser (New Orleans): I merely want to reiterate what has been said by Dr. Bender in his excellent paper and by Dr. Hargrove in his discussion; that it is really of extreme importance to differentiate between the two conditions, circulatory and cardiac failure. Actually, you may

kill your patient if you give the treatment which is not the one indicated. In other words, you may do more harm than good. I think this paper is particularly appropriate because of the fact that most of the symptoms of peripheral failure are highly suggestive of heart failure and the tendency has been to treat these patients as having acute failure of the heart.

In one sentence, Dr. Bender made reference to diphtheria and to rheumatic fever. I would like to say one word about diphtheria, namely, that the degree of heart involvement is often out of proportion to the severity of the disease or to the local expressions of the disease. I have seen in the contagious disease wards of Charity Hospital in New Orleans children with minimal involvement,—if you can speak of diphtheria with minimal involvement,—of one tonsil, or possibly two tonsils, who have had antitoxin and have recovered to all intents and purposes, I have seen these children attempt to climb out of bed, keel over and die. So, I am quite emphatic in ward rounds with the senior students, to try to impress on these young men the importance of prolonging convalescence in diphtheria, irrespective of the severity of the disease. I think if you will give the patient after diphtheria a long convalescence, and convalescence in bed understand, the likelihood of cardiac injury is minimized. If you ever have the tragic experience of having a child who is well, so far as you can tell clinically, do something rather violent and then suddenly expire, you will realize that the point I have just said is really quite important. So I insist with these students of mine that they keep the child in bed for a period of at least three weeks, and thereafter for another period of three weeks, permitting that child to take only very limited exercise.

Dr. Ralph Talbot (Monroe): Dr. Bender, I note in peripheral circulatory failure sometimes there is a low blood sugar. Now, is that always the case in infectious diseases where there is circulatory failure? I had a patient with acute gastroenteritis with circulatory failure and took the blood sugar and it was about 50 mg. Is it typical that there is low blood sugar in circulatory failure?

Dr. N. Judson Bender (in closing): In reply to Dr. Talbot's question, the blood sugar, as a general rule is reduced. A great deal needs to be done about peripheral circulatory failure in infectious diseases, particularly in regard to blood chemistry changes.

Briefly, I have tried to present this so that it would stimulate all to differentiate these types in order that life may be spared during the few critical hours of a severe infection and ultimate recovery brought about.

# THE NEUROSURGICAL TREATMENT OF SCIATIC PAIN

## WITH NOTES ON 50 CONSECUTIVE CASES*

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As early as 1911 surgeons[1, 2] began to suggest that chronic sciatic pain could be caused by an intervertebral disk which had protruded into the spinal canal. However, it was not until 1934 that Mixter and Barr established laminectomy as the treatment for sciatica caused by nerve root compression. Since then, this disease has been universally accepted as a clinical entity and the operation for its cure is now performed thousands of times a year. This sudden appearance of a "new" disease has naturally been accompanied by numerous diagnostic tests and surgical technics, many of which have already been discarded. Modifications of early procedures have greatly facilitated both the recognition and treatment of this lesion. Obviously further evolution in the management of these cases will occur. This paper will be confined to remarks concerning the present status of the disease.

Four roots of the cauda equina, namely, the fourth and fifth lumbar and the first and second sacral, are the chief components of the sciatic nerve. Compression of any one of these roots within the spinal canal results in radiation of pain along the sciatic nerve. Intermittent root compression causes intermittent sciatic pain. If the root is severely compressed, there is partial loss of motor and sensory function in the distribution of that nerve.

Lesions of the third, fourth and fifth lumbar intervertebral disks are capable of causing compression of these roots. The offending lesion may be a discrete nodule containing nucleus pulposus, annulus fibrosis or both. Such nodules are encapsulated by the posterior longitudinal liga-

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ment. The lesion may be an unattached piece of fibrocartilage which has been extruded from the disk and has broken through the ligament. Also a disk may bulge or protrude far into the spinal canal and yet be apparently intact. The point at which a root of the cauda equina is vulnerable to compression by one of these lesions is at or near its point of fixation, namely the point at which it leaves the dural sac. A final and important factor is the counterpressure provided by the ligamentum flavum and the lamina which lie in contact with the posterolateral surface of the root.

### DIAGNOSIS

The most important single factor in making a diagnosis of sciatica resulting from compression of a nerve root by a ruptured disk is the history. In a large proportion of cases the lower spine has been injured by falling, lifting or jumping. Intermittent attacks of low back pain over a period of months or years follow. It is assumed that this "lumbago" results from progressive changes in the degenerating intervertebral disk. Eventually, though perhaps not for many years, a portion of the diseased disk encroaches upon the spinal canal and irritates a nerve root with resulting radiation of pain down the back of the thigh and calf to the foot and even to the toes. Pain in the large toe is suggestive of rupture of the fourth disk. Pain in the smaller toes indicates rupture of the fifth disk. After several weeks a change of posture and a protective muscle spasm may cause a flattening of the lumbar lordosis, a list of the spine to one side, and perhaps complete disappearance of the sciatic pain. However, other attacks follow and in time the sciatica becomes chronic. With increasing compression of the nerve root the patient notes numbness in the calf, foot and toes. In severe compression there may be objective evidence of diminished skin sensibility. The motor weakness is always slight or undemonstrable because each muscle receives impulses from more than one nerve root. The Achilles reflex can disappear in rupture of the fifth disk. The reflex persists or at most is merely depressed in rupture of the fourth disk. Coughing and sneezing cause intensification of the sciatica and forward bending is intolerable. Eventually that pain may keep the patient in bed or force him to use a cane or crutches.

### NEUROLOGIC EXAMINATION

A complete neurologic examination is always made. Special attention is paid to the posture and limp. On palpation a point of tenderness is usually found over the fifth spinous process or over the lamina of the fourth or fifth vertebra on the side of the sciatica. A slight weakness of muscles can at times be demonstrated by having the patient compare his ability to stand first on one heel and then on the other. The difference, if any, in the ankle jerks can best be brought out with the patient kneeling in a chair. Diminished skin sensibility over certain areas of the toes, feet and calves is searched for with a pin and a piece of cotton. The angle to which straight leg raising on the two sides can be carried without pain is determined.

### ORTHOPEDIC EXAMINATION

During the last few years it has often been said that patients with sciatica sometimes have unnecessary laminectomies and that proper orthopedic treatment would have provided relief. To avoid such criticism and to eliminate errors, 88 per cent of the last 50 operative cases have been referred by or referred to orthopedic surgeons. In the last ten months of the seventeen month period which this series covers no patient has been operated on without orthopedic advice. In many instances the orthopedic surgeon has treated the patient for weeks or months before recommending laminectomy. In an additional 25 cases of suspected ruptured disk the patients have not returned for laminectomy because the orthopedists have established other diagnoses or have procured relief of the sciatic pain by other methods.

In numerous instances an orthopedic surgeon has requested to be present at operation in order to obtain further information

concerning the mobility of the articular facets. In only one instance, however, has an orthopedist proceeded with spinal fusion after removal of the extruded part of the disk. Nevertheless, it is my belief that combined laminectomy and spinal fusion will be performed more often in the future when back pain due to an unstable lumbosacral joint is a major feature of the clinical picture.

An essential part of the orthopedic study is the making of anteroposterior, lateral and oblique roentgen films of the lumbar spine. Such films, however, contribute little or nothing in establishing the diagnosis of this form of sciatica. Also, the discovery of arthritis or anomalies does not necessarily cast doubt upon the diagnosis of ruptured disk. The chief value of films is in ruling out bone tumors, metastatic carcinoma, spondylolisthesis and in determining the condition of the lumbosacral disk and corresponding articulations.

It is my observation that the orthopedic surgeon is chiefly concerned in these cases of ruptured disk with reduction of the nerve root compression by postural means. This includes bed rest with flexion of the spine and hip by means of traction, and maintenance of proper position by a plaster jacket or back brace, correct shoes and postural exercises. In many advanced and typical cases the orthopedists refuse to attempt treatment and recommend immediate laminectomy. In brief, operation is reserved for those patients whom the orthopedic surgeon is unable to help.

### MYELOGRAPHY

Until recently the diagnosis of ruptured disk has usually been established by roentgen ray visualization of the lesion following the introduction of air or lipiodol into the spinal canal. This has been abandoned except in atypical cases in which both neurosurgeon and orthopedist are unable to make a definite diagnosis and unable to relieve symptoms by empirical measures. Air myelography was unsatisfactory except in an occasional case. Furthermore, it was a troublesome procedure to perform and an exceedingly uncomfortable one for the patient.

Lipiodol is no longer used because: It is impossible to remove all of it at operation; it gives rise to controversy in compensation cases; it cannot be kept long because of deterioration; it provides unpleasant though transient symptoms such as neuritis in many persons; it is a troublesome procedure to carry out; and it can be misleading in laterally placed lesions of the fifth disk. However, despite the controversy which has arisen, it is generally conceded by those most experienced that there are no permanent ill effects from lipiodol which has been left in the spinal canal.[3] Lipiodol has been used only three times in the last 15 cases of this series and in one of these the instillation was made before the patient was referred.

Thorotrast myelography, tried by only a few surgeons, has contributed some interesting anatomic information but has too many serious disadvantages to be given further consideration.

### TOTAL PROTEIN CONTENT OF SPINAL FLUID

One of the laboratory tests which at first seemed to assist the clinician in determining the etiology of sciatica was analysis of the spinal fluid, particularly as to its protein content. Since the protein content is elevated in only about 50 per cent of proved cases of ruptured disk, the test is misleading rather than helpful and should be discarded. In fact, spinal puncture should not be performed in cases of ruptured disk unless there is some special indication.

### SUMMARY OF DIAGNOSTIC MEASURES

In brief, except for routine roentgen films, laboratory tests have no place in the diagnosis of the majority of cases of sciatica due to rupture or protrusion of an intervertebral disk. The diagnosis is a clinical one made by neurosurgeon and orthopedic surgeon working in collaboration. The indication for laminectomy is incapacitating chronic sciatic pain, with or without back pain, which cannot be relieved by orthopedic measures.

### SIMILAR LESIONS CAUSING SCIATIC PAIN

A number of other lesions can simulate the clinical picture of ruptured disk. Among them are: intradural neuromas and other tumors involving a single nerve root, varicosities around a single root, infection about a root, and hypertrophy of the ligamentum flavum. The latter lesion is largely mythical and surely never the cause of sciatica in the presence of a completely normal intervertebral disk. As already pointed out the nerve root is pinched between the diseased disk and the ligamentum flavum. If the latter happens to be congenitally thick, anomalous or hypertrophied by trauma, only a slight bulging of the corresponding disk is needed to pinch the root. Other lesions which resemble somewhat the clinical picture of ruptured disk are: Sarcoma of the spine, metastatic carcinoma of the spine, spondylolisthesis and diseases of the articular facets and corresponding intervertebral foramina. It is this group which the orthopedist can recognize clinically and rescue from unnecessary laminectomy.

### TREATMENT

During the early period of this "seven year old" disease the operative treatment consisted of a classical laminectomy with removal of the spinous processes and laminae of the lower two or three lumbar vertebrae. This gave a fine exposure of the dural sac, nerve roots and intervertebral disks. It facilitated transdural removal of disk nodules near the midline and removal of lipiodol. However, the modern operation, gradually evolving from a laminectomy, bears little resemblance to it. To be specific, a midline incision three inches long is centered over the tip of the posterior spinous process of the fifth lumbar vertebra. The muscles and periosteum are retracted from one side of the fifth spine exposing the laminae of the fifth lumbar and first sacral vertebrae and the intervening ligamentum flavum. The latter is removed with sharp dissection giving a glimpse of the dural sac. With a special biting instrument this interspace is gradually widened at the expense of the two exposed laminae. The posterolateral aspect of the dural sac can be exposed for a length of one inch without complete removal of either lamina and without exposure of an articular facet. The dural sac and first sacral root are retracted toward the midline exposing the fifth disk and its lesion. Should the nerve root be perfectly free and the disk normal, the skin incision is extended upward and the fifth lumbar nerve and fourth disk are examined through the fourth interspace. If the surgeon should suspect, because of the distribution of pain and numbness, a rupture of the fourth disk rather than the fifth, the fourth disk would, of course, alone be exposed. Fortunately, the lesion is of the fourth or fifth disk in more than 90 per cent of cases.

Variations of the operative approach and the methods of handling the lesion once it has been exposed will not be discussed here. It is sufficient to say that the extruded portion of the disk is removed so that the root can no longer be compressed. In certain cases of a bulging but otherwise intact disk it is important not to attack the disk but to be satisfied with thorough removal of the overlying ligamentum flavum and bone. Frequently, in such cases I have gone so far as to open the dura and section the sensory fibers of the involved root to be certain of obtaining permanent relief from pain. The indications for this precaution seem to be diminishing but have not entirely vanished particularly in the case of an excessively bulging disk. Intradural section of the sensory fibers was carried out in 24 of the 50 cases.

The operation has three hazards, namely, accidental cutting of the dura with annoying escape of the fluid into the field, accidental pinching of the nerve root by the bone biting instrument, and tearing of the thin-walled venous plexus which lies anterior to the dural sac. Since the latter invariably occurs when the dural sac and root are retracted in exposing the disk, profuse bleeding is to be anticipated. This is the chief cause of failure in the hands of those who do not have the instruments necessary for control of bleeding.

Since the operation is performed through one of the interspaces without removal of the posterior spines, laminae or articular facets, there is no need for immobilization and there is no contraindication to walking on the seventh day.

Some aspects of the subject have of necessity been omitted from this discussion, but I will not close without referring briefly to statistics. It should be kept in mind that the patients in this group had chronic incapacitating sciatica which did not subside with treatment or the passage of time. During the seventeen month period ending April 1, 1941, 50 consecutive patients were treated by laminectomy for sciatica presumed to be due to nerve root compression. Nineteen of the patients were at Charity Hospital in New Orleans. The other 31 were distributed among six private hospitals in New Orleans. There was definite evidence of trauma as the etiologic agent in 46 per cent of the cases. In 30 per cent the patient could not recall an injury. There is no information on this point in 24 per cent. Seventy-four per cent had low back pain in addition to the sciatica. The sciatica was unilateral in 78 per cent of cases.

In view of the fact that trauma is considered the most important etiologic factor in the production of ruptured disk, it is not surprising that only 12 of the 50 patients were women. The average age of the patients was 37 years, suggesting that disks of young people are stronger and that it takes years for a disk to break up. The youngest patient was 18 and the oldest 58 years of age.

There has been correspondence with or examination of 40 of the 50 patients during the past five months. Of the 40 thus followed, 29 are classified as having a successful result, eight are improved and three unimproved. All 50 of the patients are known to be alive. The important complications were a permanent weakness of a foot in one case, temporary foot drop in another, one case of transient thrombophlebitis and 3 cases of superficial wound infection. In analyzing the type of lesion found and the type of operation carried out it is found that in only one case was the extruded disk tissue sufficiently large to block completely the spinal canal. Weakness of the feet and urinary retention appeared a few days before operation. In four cases a free piece of fibrocartilage was found in the spinal canal. Three of the patients are cured and one is still having some pain which is not explainable except by some such hypothesis as multiple lesions. In 25 cases of discrete nodule on the disk there are only three instances of failure to obtain a cure and these patients are classified as improved. However, five patients have not been followed. Only seven of these patients had section of the sensory fibers.

Of 10 cases of bulging disk (which were not disturbed at operation) the affected root was sectioned in eight. Three have not been followed and two are considered as improved. One patient, reoperated upon because of the appearance of sciatica on the other side, is classified as a failure because of persistent pain. In four cases no abnormality was found. For reasons not apparent all four patients are better and are classified as improved. In six cases no examination or only an inadequate examination of the intervertebral disks was made. In each instance the dura was opened and the sensory fibers of the suspected root or roots were cut. Three have completely recovered; three are improved but not entirely free of pain.

SUMMARY

Rupture of the lower lumbar disks has been firmly established as a common cause of chronic sciatic pain. The diagnosis is based almost entirely on the history and clinical findings. Myelography with air or lipiodol is no longer routine but reserved for atypical cases. Spinal puncture for total protein determination has been discarded. Operative removal of the extruded portion of the disk should be done only when an orthopedic surgeon recommends the procedure. The modern operation, which requires special instruments and technic, does not weaken the back and is almost

without risk. In the series of 50 consecutive cases here reported, only three are unimproved and only one has an important complication.

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DISCUSSION

Dr. E. L. King (New Orleans): I would like to ask Dr. Echols a question, based on personal experience. I had a rather severe attack of sciatica in 1929, supposed to have been due, at that time, to bad teeth. The teeth were taken out and in six months I was all right. I did not stop work but it worried me quite a bit. Dr. Echols will remember that about two years ago I had a mild attack. For a few months I was treated by an orthopedist and Dr. Echols, in consultation, examined me. With orthopedic treatment and diathermy I got all right. I want to know whether I am a candidate for laminectomy in the future, after two years with no trouble.

Dr. Joseph Cohen (New Orleans): I do not think that at any of our meetings have we had such an enlightening discussion of a subject that so many of us know so little about. I, for one, feel indebted to Dr. Echols for bringing this subject to our attention in such an informative manner.

Dr. Dean H. Echols (In closing): If Dr. King's sciatic pain was due to mechanical irritation of a nerve root, which is by no means certain, he is likely to have another attack soon. I hope his pain was due to some transient disturbance. Dr. King's discussion has served to illustrate the important point, namely, that the neurosurgical treatment of sciatica should be reserved for those patients whom the orthopedist cannot cure.

# ACUTE MECHANICAL INTESTINAL OBSTRUCTION*

## THE DANGERS OF PROLONGED PREOPERATIVE DECOMPRESSION BY MEANS OF THE MILLER-ABBOTT TUBE AND GASTRODUODENAL SUCTION DRAINAGE

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In the past few years there has been an unfortunate tendency to disregard the dictum that acute intestinal obstruction demands immediate operation. This is due largely to recognition of the important role of increased intraluminal pressure in the production of lethal changes in intestinal obstruction and to the introduction of nonoperative methods for decompressing the bowel. There has been a great volume of work done in an effort to clarify our understanding of the changes that occur in intestinal obstruction. This will not be reviewed but only those factors that seem well established and of prime importance will be presented. The rationale of certain procedures now advocated, that necessitate delay of operation, will be discussed, and reasons will be given why we are still of the opinion that immediate operation is indicated when the diagnosis of acute mechanical obstruction is made.

TYPES OF OBSTRUCTION

For logical discussion and comparison of mortality rates the usual clinical classification of intestinal obstruction is not satisfactory. What has actually happened to the involved bowel is more important in these considerations than the anatomic cause of the obstruction. In this presentation I shall use chiefly the classification based on pathologic and physiologic changes which divides intestinal obstruction into two main groups, mechanical and paralytic. A third type which is rarely seen, spastic obstruction, should be included for completeness. Mechanical obstruction may be complete or partial. Complete mechanical obstruction may be simple or strangulated. In simple obstruction there is a blockage of the lumen of the bowel without vascular disturbance. Strangulated obstruction exists when there is blockage of the lumen plus interference with the blood supply of the involved bowel. Simple mechanical obstruc-

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tion of the colon in the presence of a competent ileocecal valve presents a special problem. Gas and fluid can go from the ileum into the cecum but none can regurgitate from the cecum into the ileum; thus there is in effect a "closed-loop" type of obstruction. This allows marked distention to occur in the colon without distention of the small bowel. The discussion that follows is confined to acute mechanical obstruction. Partial or chronic mechanical obstruction and paralytic ileus are not included.

There are three main pathogenic factors in intestinal obstruction: (1) Strangulation, (2) loss of fluids and electrolytes, and (3) increased intraluminal pressure. We shall consider the role each plays in the production of lethal changes in obstruction and shall then discuss the therapeutic measures available to prevent or correct such changes.

*Strangulation:* This is a most important pathogenic factor. With interference of the mesenteric vessel by the obstructing mechanism, well-known changes occur. First, interference with the return of venous blood takes place, this produces edema and further compresses the vessels, and eventually the arterial system is occluded. Cyanosis develops, edema occurs, and there is a loss of plasma and whole blood, both into the lumen and into the peritoneal cavity. Changes take place in the mucosa which alter its permeability, and eventually death of the bowel wall occurs, with peritonitis, shock, toxemia, and infection.

*Loss of electrolytes and fluids:* In complete obstruction of the duodenum, jejunum, or upper ileum there is soon a marked loss of electrolytes and fluids that produces striking changes in the blood and normal body functions. Absorption takes place mainly in the lower ileum and colon; consequently, the secretions poured out from the liver, pancreas, stomach, and small intestines are not absorbed. This lack of absorption may produce a loss of many grams of electrolytes and as much as 4,000 to 7,000 c. c. of fluids in 24 hours. If the obstruction is above the ampulla of Vater, alkalosis develops along with dehydration, hemoconcentration, electrolyte loss, and an increase in the non-protein nitrogen. If the obstruction is below the ampulla of Vater, a loss of electrolytes occurs first, because of loss of equal amounts of acid and base components, and acidosis develops later when dehydration has become severe. Changes in plasma chlorides, non-protein nitrogen, and blood concentration are similar to those mentioned for supra-ampullar obstructions.

It has been repeatedly shown in simple obstruction produced experimentally in dogs that the parenteral administration of glucose and sodium chloride prolongs life in both high and low obstructions. When this was first observed, investigators thought they had solved the riddle of intestinal obstruction, but, unfortunately, the same benefits do not follow in low simple obstruction in man. This has been explained as due to the difference in the musculature of the bowel in the dog and in man. The dog has a thick muscular layer that allows for only slight distention in low obstruction of the simple type. Man has much less muscular tissue, and bowel distention becomes a marked feature. With distention, segmentation of the bowel occurs to complicate the picture further, as the changes that occur concomitantly with distention and segmentation result in abnormal absorption. This produces characteristic alterations in the blood that cannot be relieved or corrected by the simple administration of sodium chloride, water, and glucose. Since low obstructions account for the large majority of intestinal obstructions occurring in man, it follows that the loss of electrolytes and fluid is secondary in importance to the effects of strangulation and increased intraluminal tension.

*Increased intraluminal pressure:* This is a most important factor in the production of lethal changes in intestinal obstruction in man. With complete obstruction of the small bowel there occurs, after a period of time, distention that may increase the diameter of the bowel to four or five times

its normal size. With the increase in diameter the bowel elongates and, in order to accommodate itself within the peritoneal cavity, folds on itself and kinks or segments every ten or twelve inches.[1] This produces a number of segments distended with fluid and gas which are potentially closed loops, the segment proximal to the point of obstruction being most distended.

Distention is due to the accumulation of gas and fluid in the obstructed bowel. The gas is composed of swallowed air (68 per cent[2]) and of gas from fermentative and putrefactive changes in the obstructed loops of bowel. The fluid is an accumulation of the secretions and excretions poured into the bowel from the liver, stomach, pancreas and bowel itself. The distention affects the mucosa, interfering with normal absorption, and after the intraluminal pressure reaches a certain level the intestinal wall begins to "weep" a plasma-like fluid.

When distention becomes great enough, the circulation of the mucosa is embarrassed and the power of selective absorption is lost, thus allowing the absorption of toxic material from the obstructed loops. In the proximal segment such changes may occur in a relatively short period of time. These facts have been conclusively demonstrated by experiments such as those of Haerem, Dack and Dragstedt[3]. In these experiments, a segment of the lower ileum of the dog is carefully isolated so as to leave its blood supply intact. The segment is closed at each end and the continuity of the remaining ileum is re-established. Botulinus toxin is injected into the closed loop. This toxin is not absorbed from the normal intestine in dogs or from the closed loop that is not distended, but when the closed loop is distended with air the botulinus toxin is easily identified in the blood stream. This offers an explanation of the toxemia associated with intestinal obstruction and points out the rationale of decompressive measures.

### TREATMENT OF STRANGULATION

It is agreed that when strangulation is present immediate operation is imperative to relieve the strangulation and remove the bowel if it is not viable. Viability of the bowel is indicated by the return of color after the application of hot packs, the demonstration of peristaltic waves in the involved bowel, and the presence of normal pulsations in the mesenteric vessels. If the bowel is viable, the release of obstruction alone is sufficient. If the bowel is not viable, it must be extirpated without spillage of the contents. In this instance, the most conservative procedure is the best, and this is usually exteriorization of the involved bowel with resection of the exteriorized loops, leaving a double-barreled enterostomy or colostomy. Resection with primary anastomosis is seldom indicated. Decompression can be maintained by intestinal intubation with the Miller-Abbott tube and in some cases by the Wangensteen suction drainage. If obstructive resection of the large bowel is done, a cecostomy is considered the best decompressive measure. The associated plasma loss in strangulation necessitates plasma or blood transfusions.

### REPLACEMENT OF FLUIDS AND ELECTROLYTES

The administration of saline and glucose solutions intravenously aids in correcting derangements in blood chemistry by supplying fluid, electrolytes and a source of energy. Sodium chloride is useful in the treatment of both acidosis and alkalosis, provided an adequate amount of water is supplied for the kidneys. Whole blood, citrated blood, or plasma should be given if shock is present. In obstruction of the strangulated variety or of long duration, plasma or whole blood is particularly valuable. In the preoperative and postoperative management of patients with acute mechanical obstruction, the replacement of fluid and electrolytes is considered essential as an adjunct only.

### DECOMPRESSIVE MEASURES

Adequate decompression will prevent and correct the ill-effects of increased intraluminal pressure. In obstruction of the simple type, decompression and replacement of fluids and electrolytes make delay of operation relatively safe and permit op-

eration to become elective. However if strangulation exists, delay of operation to obtain adequate decompression is dangerous and will lead to a very high mortality. The methods now in use for decompression are: (1) Gastroduodenal drainage of the Wangensteen type, (2) intubation with the Miller-Abbott tube, (3) nasal administration of oxygen, and (4) enterostomy or colostomy.

(1) Gastroduodenal drainage by constant suction to an inlying duodenal tube: This is the well-known method of decompression popularized by Wangensteen[4] which effectively decompresses the upper gastrointestinal tract but is of no value for the relief of distention of a lower ileum which has become segmented.

(2) Intubation with the Miller-Abbott tube: This is a double-lumen nasal tube[5] about 10 or 12 feet long with a balloon attached to the tip in such a way that it can be inflated and deflated. The tube is passed into the stomach with the balloon deflated. Siphonage suction is employed to decompress the stomach and the tube is allowed to go into the duodenum. The balloon is inflated after it has passed the pylorus. Peristaltic waves carry the ballooned tip into the lower small bowel and the bowel is decompressed as the tube passes downward. Fluoroscopic control is helpful, although not essential, in engaging the tip of the tube in the pylorus. Patience on the part of both patient and physician is necessary for passage of the tube. Usually, from six to 24 hours are required for the tip of the tube to reach the duodenum and from 24 to 72 hours or longer for it to reach the lower ileum. This method has an obvious advantage over the Wangensteen method in that it deflates the lower loops of obstructed small bowel where distention is most marked.

If strangulation could be definitely ruled out, this method would be ideal for simple mechanical obstruction because in this type of obstruction the most important factor in the production of lethal changes is distention in the segment proximal to the point of occlusion. Relief of distention in the proximal segments and replacement of fluids and electrolytes allow operation to become an elective rather than an emergency procedure. Under these circumstances, operation can be performed when the bowel is collapsed, and the danger associated with handling of distended bowel can thus be avoided. However, it is not possible to be sure that the obstruction is simple and not strangulated. For this reason, the delay necessary in the use of this procedure involves the risk of allowing a bowel that is primarily strangulated to undergo irreparable damage.

(3) Nasal administration of oxygen: the nasal administration of oxygen as a decompressive measure was suggested by the work of McIver, Redfield and Benedict[6] in 1926 but was brought into clinical prominence by Fine, Sears and Banks[7] in 1935. This measure is based on the principle that the solubility of gases depends on their partial pressure and upon the fact that about 70 per cent of the gas in the distended bowel is nitrogen. In this procedure the tension of the nitrogen in alveolar air is lowered by displacing nitrogen with oxygen. This allows an increased amount of nitrogen to escape from the blood into the alveoli and consequently allows more nitrogen to be absorbed from the intestinal lumen.

Obviously, this method is only an aid to the relief of distention, as it removes only the gaseous portion of the material in the distended bowel. It is not advocated for prolonged preoperative use but it does have a place in the postoperative care of mechanical obstruction and in the management of paralytic obstruction.

(4) Enterostomy and colostomy: These are operative methods for decompression. Many arguments have been offered for and against enterostomy in small bowel obstruction. Enterostomy alone definitely has no place in the management of strangulated obstruction. Since the introduction of the Wangensteen and Miller-Abbott methods of decompression, it is questionable whether enterostomy should be used in any type of obstruction. If it is used, the opening

should be placed in the segment proximal to the point of obstruction, and in this location ileostomy offers no advantages over the Miller-Abbott tube and has the disadvantage of being a source of peritonitis. Jejunostomy for low ileal obstruction is not a rational procedure and certainly offers no advantage over decompression with the Wangensteen gastroduodenal suction drainage.

In large bowel obstruction, ileostomy should not be used as a decompressive measure. The ileocecal valve is competent in the majority of cases[8] and in these instances the distention may be confined entirely to the large bowel. For the same reasons, the Wangensteen and Miller-Abbott methods of decompression are of no help in large bowel obstructions. Cecostomy or colostomy is the procedure of choice when decompression is indicated in colonic obstruction.

In complete mechanical obstruction, preoperative decompression continued over a long period of time by means of nasal tubes is a dangerous procedure. It is true that in the simple type of obstruction it is safe, but this predicates the ability to distinguish clinically between simple and strangulated obstruction, and we do not believe that this is possible in all cases. Delay of operation for as short a period as four to six hours may be sufficient to allow a viable bowel to become non-viable, to permit peritonitis to develop, or to make the difference between recovery and death. It is also true that elective operation at a time when the bowel is not distended makes operation safer and technically less difficult. However, these advantages do not compensate for the risk of delaying operation on a patient whose bowel is primarily strangulated.

## DISCUSSION

Since the Miller-Abbott tube was introduced there has been a tendency toward too frequent use of this method of decompression, with consequent delay in operation. When Wangensteen popularized his gastroduodenal suction drainage there was a similar wave of enthusiasm, during which time the method was frequently used incorrectly in intestinal obstruction with consequences with which we are all familiar. I believe that if a diagnosis of acute mechanical obstruction is made, the patient should be operated upon as an emergency procedure. During the time necessary to get the operating room ready and the patient prepared for operation, decompression of the upper gastrointestinal tract by inserting into the stomach either a Levin tube or a Miller-Abbott tube and connecting the tube with a suction apparatus, is advocated. The latter tube is preferred, as it may be left in place and allowed to go into the small bowel for postoperative decompression. Operation should not be delayed to allow the Miller-Abbott tube to pass into the small bowel. Upper gastrointestinal decompression during this period of delay relieves the distention somewhat and lessens the chance of regurgitation and aspiration during anesthesia. Also, during this period of necessary delay, normal saline and glucose solutions should be given intravenously and the patient's blood matched for transfusion. If the patient presents a picture of shock, measures to overcome shock should be instituted before operation is performed.

How can we justify our stand in regard to decompression in view of the excellent results reported by advocates of the Miller-Abbott tube? A careful study of these recent reports[9, 10, 11] reveals several points that answer this question in part. First, the cases of mechanical obstruction reported with such low mortality figures are stated to be simple obstructions only; strangulations are excluded, as are hernias, intussusceptions, volvulus of the sigmoid and carcinoma of the colon, all of which are types of obstruction that carry the highest mortality rates (table I). Second, the case reports given do not make it clear that all the patients included actually had complete mechanical obstruction.

In further support of the stand taken on this question, a review is presented of the cases of intestinal obstruction treated by operation in the Charity Hospital of New Orleans during the past five years, in

which the effects on mortality of the presence or absence of strangulation at the time of operation were studied. There were 147 cases of simple obstruction, with a mortality rate of 17 per cent. In 108 patients who had strangulation at the time of operation, the mortality was 62 per cent (table I). These

TABLE I

OPERATIONS FOR ACUTE MECHANICAL OBSTRUCTION AT THE CHARITY HOSPITAL AT NEW ORLEANS*
1936-1940

| | Strangulated | | | Non-strangulated | | | |
|---|---|---|---|---|---|---|---|
| | No. cases | Deaths | Mort. rate per cent | No. cases | Deaths | Mort. rate per cent | Percentage of strangulations |
| Adhesions | 45 | 24 | 53 | 98 | 15 | 15 | 31 |
| Hernia | 35 | 20 | 57 | 14 | 2 | 14 | 71 |
| Intussusception | 10 | 6 | 60 | 21 | 4 | 19 | 32 |
| Volvulus | 16 | 15 | 94 | 9 | 1 | 11 | 64 |
| Miscellaneous | 2 | 2 | 100 | 5 | 3 | 60 | 28 |
| Total Cases | 108 | 67 | 62 | 147 | 25 | 17 | 42.4 |

*Malignancy excluded.

patients, with few exceptions, were operated upon within a few hours after the diagnosis of obstruction was made. The results obtained in this series in simple obstruction are comparable to the results obtained by Johnston and his co-workers[9, 10] with the use of the Miller-Abbott tube. I also had the distinct advantage of not running the risk of treating strangulated obstruction conservatively. The findings do not substantiate the view of Johnston and his co-workers[9] that "Since the incidence of true strangulation is low, the increase in total mortality should not be great even if the condition was not recognizable and operation was therefore delayed." In my series, 42.4 per cent of the cases were of the strangulated variety, as evidenced by blockage of the lumen and interference with the blood supply of the involved bowel.

## SUMMARY

The following points summarize my opinion concerning the management of acute mechanical intestinal obstruction:

1. Acute mechanical obstruction demands immediate operation.

2. Preoperative decompression continued over a long period of time by means of nasal tubes is a dangerous procedure.

3. During the hour or two of delay necessary for setting up the operating room and preparing the patient, gastric suction with a Levin tube or a Miller-Abbott tube should be employed, infusions of sodium chloride and glucose should be given, and the patient's blood should be matched for transfusion.

4. The obstruction must be released or removed, but the principle of doing the least possible amount of surgery should be followed. The non-viable bowel must be removed but primary anastomosis should seldom be attempted.

5. Unusual care must be exercised in handling the dilated bowel to avoid tearing with consequent spillage.

6. Enterostomy is contraindicated. Ileostomy in the proximal loop has no advantage over a Miller-Abbott tube in the same place, and jejunostomy has no advantage over gastroduodenal suction drainage. In obstruction of the large bowel due to carcinoma, colostomy or cecostomy should be done to relieve pressure on the cecum. Ileostomy is not indicated as a decompressive measure for obstruction of the large bowel.

7. Postoperative decompression by means of the Miller-Abbott tube is beneficial regardless of what is found and of what procedure is performed. Nasal oxygen should be administered postoperatively, both for its decompressive effect and to combat anoxemia and shock. Sodium chloride and glucose solutions should be given routinely. Transfusions of blood or plasma will save many patients who have strangulated obstruction.

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DISCUSSION

Dr. Rawley M. Penick (New Orleans): Treatment of intestinal obstruction is always complicated but I will readily agree with Dr. Romano that it has become more confused recently by the advocacy of certain conservative measures. This is due to the introduction of the Miller-Abbott tube, which has led a good many to think that decompression will simplify the whole treatment of intestinal obstruction. I also agree that the indiscriminate and unwise use of conservative measures will bring about an increase in mortality. Dr. Romano should be congratulated on his method of attack on this complicated subject; that is, a discussion of fundamental principles on which a rational therapy must be based. There is no other type of case which, if treated by rigid routine, will yield such poor results because there is no one treatment for intestinal obstruction.

The question, in this connection, being discussed most generally today is that of differentiating between simple obstruction and obstruction with strangulation. A good many surgeons feel that they can distinguish between the two types with such accuracy that treatment can be safely selected on this basis. There is little doubt in my mind that without more exact clinical methods of differentiation, this policy will increase the danger for many patients. There are, of course, many instances where a definite diagnosis of strangulation can be made or ruled out, but frequently this is not possible. When strangulation is present, the whole problem is one of operating as soon as possible—as soon as operation can be safely performed.

In regard to clinical management, I feel we should classify the cases into two large groups on the basis of distention; one in which there is little distention and the other in which distention is great. Obviously, the patients who have little distention will have early, high, or incomplete obstruction; in either instance, early operation is indicated, for experience has proved that the mortality, in such obstruction, is as low with operation as with conservative measures. Hence, when distention is not marked, there is nothing to be gained by conservative measures and much may be lost.

The second group, characterized by marked distention, gives more trouble. For convenience, I divide these into two sub-groups, that is: those in which the diagnosis of strangulation can be made and those in which this is doubtful. If strangulation is present, everyone agrees that early operation is imperative but in the larger group, where this cannot be accurately determined, I believe it is often wise to resort to decompression for a short period at least. This is not a retreat from the necessity for early operation but is a continuation of the principle that surgical intervention should be carried out at the earliest time which is safe for the patient. I have been impressed many times with the difficulties in operating on greatly distended gut and therefore, if this factor can be minimized with some degree of safety, it will usually prove a wise preoperative procedure.

I have said nothing about the general condition of the patient but this too often necessitates some delay in order to replace fluids and electrolytes. Such measures are most important but are not really a part of the problem under discusison.

Dr. P. D. Abramson (Shreveport): There can be no essential difference of opinion with the views expressed by Dr. Romano in his excellent paper.

I think his point has been well taken. There has been so much enthusiasm and so many enthusiastic reports regarding the Miller-Abbott intestinal intubation in intestinal obstruction that the procedure has been badly abused and used in patients who were fit subjects for surgery. There can be little argument with the opinion that a patient with complete mechanical obstruction should be operated upon early. It is hard to differentiate at times between complete and partial obstruction. Many cases of partial obstruction have been spared operation by decompressive therapy. We believe that in early cases there is as much value from Wangensteen's gastroduodenal drainage as from the Miller-Abbott tube. As pointed out, a great deal of the distention is due to swallowed air and secretions from the liver and upper intestinal tract. If this material is removed before it has gotten farther on down in the intestinal tract a great deal of distention is avoided. Once it occurs one must resort to the Miller-Abbott intubation. We do not look with quite so much disfavor on enterostomy.

If laparotomy has been deemed advisable in an organically obstructed bowel, and particularly if there is much gut distention, enterostomy may be quite valuable. Certainly the distended bowel can be much more rapidly decompressed by the procedure than by relying upon the slower method of

intubation; and the essayist has emphasized the ill effects of prolonged bowel distention.

I would like to emphasize what has been said about the maintaining of fluid, electrolyte and protein balance in these cases, particularly if there is gastroduodenal suction and they are likely to be depleted. We find clinically if the patient is secreting one thousand c.c. of urine in twenty-four hours, we may feel certain that patient is receiving ample fluid. Of course there are limitations to this simple rule. If he is secreting three grams of urinary chlorides we feel that the blood chloride level is satisfactory. Lately we have been relying upon the falling drop method of determining plasma specific gravity. This permits of more accurate fluid control; and at the same time plasma proteins can be determined and hypoproteinemia circumvented by the early use of plasma or blood transfusions.

Dr. S. M. Copland (New Orleans): The Utopian idea is immediately to segregate cases of intestinal obstruction as to mechanical or paralytic types. This is not always possible to do immediately. If there is reasonable doubt, then surgery is indicated if one is to be safe. Mechanical obstruction as well as paralytic obstruction is a surgical disease and the advent of the Miller-Abbott tube and Wangensteen suction has definitely not made intestinal obstruction a medical disease.

I think Dr. Romano covered the field very well; however, it might be worthwhile to point out that there is a considerable loss of protein with distention. This deficiency should be corrected. In my experience, I have found out when using the Miller-Abbott tube, at times there is a paralytic ileus distention above the point of the tip of the Miller-Abbott tube. When the Miller-Abbott tube is passed low in the small intestine, the stomach above may become dilated, and to combat this situation we have also employed the simultaneous use of the Wangensteen suction apparatus in conjunction with the Miller-Abbott tube.

The question of fluid balance is of extreme importance and it has been found, in judging the amount of fluid to give, that it is well to have nurses check the exact amount of material obtained through the Miller-Abbott tube and also the intake of fluid and to have suction material analyzed for sodium chloride. In this way the patient may be kept in a state of fluid balance. Since all fluid is given by hypodermic injection over a long period of time, it is essential to have this information.

There is the question of adrenal gland damage in obstruction; the administration of adrenal extract may be of value.

Dr. S. A. Romano (In closing): I shall present briefly a case history, typical of many found in this review, that illustrates the difficulty in differentiating simple from strangulated obstruction.

A fifteen year old colored boy was admitted one and a half years after an appendectomy with a chief complaint of intermittent, colicky abdominal pain of 36 hours' duration. Vomiting had been present at the beginning of the attack and recurred 30 hours later.

Examination revealed the following: Temperature 99.4° F., pulse rate 70; and respiratory rate 24. The blood pressure was 110/75. The abdomen was distended but palpation revealed no tenderness, rigidity or rebound tenderness. On auscultation there was noted an increase in peristaltic sounds.

A laparotomy was performed within an hour and a half after admission. The findings at operation were: Free straw-colored fluid; adhesions obstructing the ileum; and strangulation of a segment of ileum. After release of the adhesions and application of hot packs, the color of the bowel became normal except for a small area where adhesions had compressed the bowel. This area was inverted with a few Lembert sutures. Peristaltic waves traversed the involved segment of ileum and normal pulsations were felt in the mesenteric vessels.

The patient made an uneventful recovery.

According to the criteria of those who advocate the use of the Miller-Abbott tube this patient should have had preoperative decompression of the ileum with a Miller-Abbott tube because the absence of signs of peritoneal irritation and the lack of constant pain pointed to a simple obstruction. However, as was shown at operation, strangulation was present at the time of admission and delay of operation for 12 to 48 hours to allow a Miller-Abbott tube to decompress the ileum would have been fatal.

## BLADDER INSUFFLATION AS AN AID IN THE LOCALIZATION OF VESICOVAGINAL FISTULA

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Vesicovaginal fistulae with their cardinal signs and symptoms of urinary incontinence, ammoniacal odor and genital irritation are easily diagnosed when the opening is discernible on inspection. There are, however, certain fistulae which, on account of their position or size, cannot be so easily located. This latter type of lesion can, in most instances, be seen by injecting a dye or milk into the bladder and watching for its appearance in the vagina. In one patient even this procedure failed to visualize the fistula when one was known to be present. The thought occurred to me that perhaps air insufflated into the bladder would be an aid.

The patient was placed in the lithotomy position and the posterior vaginal wall was gently retracted. A number eighteen (18) French catheter was placed in the urethra and a double bulb cautery set was attached to the catheter to inflate the bladder. An ounce of water was then placed in the vagina and air was seen to bubble through the water when the bladder was inflated just as one would locate a puncture in an inner tube. This method seemed to be so much cleaner and surer than the dye injection that it was adopted as routine in these cases.

At cystoscopy some fistulae are elusive because of mucosal folds surrounding them, but with air localization, a ureteral catheter can be passed from the vaginal side of the bladder and then easily seen by the urethroscope or cystoscope.

Bladder insufflation with air is further utilized at the time of fistula operation. When the fistula has been mobilized and closed by suture, the bladder is insufflated and if there is any leak through the fistula or if another fistula is present it can readily be discerned. When a dye is used to test the closure, all the tissues are stained; if repair is inadequate and a re-test with the dye is done, it might be misleading on account of the stained tissues.

When difficulty is anticipated in a pelvic operation where the normal anatomy is distorted, bladder insufflation of air is a distinct aid in delineating the bladder to protect it from injury. In addition, if injury has occurred, it can be located by this method and repaired.

Air seen bubbling through water in the vagina.

## ESTROGENIC HORMONE THERAPY IN PROSTATIC HYPERTROPHY*

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NEW ORLEANS

In any consideration of the non-surgical treatment of the enlarged prostate it must first be understood that there exist four pathologic types of prostatic obstruction; namely, acute prostatitis, carcinoma, fibrotic contracture of the vesicle neck, and prostatic hyperplasia. It is the last named of the four, only, which has engaged the attention of the medical profession for the past fifty years in efforts to determine its etiology and thereby indicate proper preventive or restorative non-surgical treatment.

The belief that prostatic hypertrophy is due to some endocrine disturbance has existed for a long time. White, in 1893, was first to recommend that castration be tried as a cure for hypertrophy. However, after some popular enthusiasm in this direction, the procedure passed into oblivion about 1900. The various Steinach procedures were also based on endocrine theories, but failed to retain any degree of favor.

The isolation of the male sex hormone, called androsteron, by Butenandt in 1931, then stimulated an increased interest in hormone therapy and a number of theories

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to explain prostatic hypertrophy have lately appeared. However, it has been definitely proved clinically that the male sex hormone, when administered to the human, does not cause any regression in the size of the prostate. In fact it actually increases its size in the dog, as shown by Huggins.[6]

On the other hand, it is now accepted generally that the male organism elaborates both male hormone and estrogenic hormone. The two are thought to exist in balance in the normal individual, but in later life the balance becomes altered and one hormone may be in excess. Wugmeister,[2] in 1937, advanced the theory that the female hormone is deficient in later life, whereupon the anterior pituitary, no longer inhibited by estrin, begins an overproduction of its gonadotropic hormones which stimulate an overgrowth of the genital glandular apparatus, including the prostate. He treated 23 men with prostatic hypertrophy with estrin, claiming clinical improvement in 16 of these patients.

Very recently Kahle and Maltry[4] have published their results in the treatment of 14 patients who had prostatic hypertrophy with the estrogenic hormone. They state that one half of the patients were symptomatically improved, and that virtually all of them showed a decrease in the size of the prostate as checked by digital and cystoscopic examinations. They also are of the opinion that the moderately enlarged prostate is probably more responsive to the influence of this hormone than the excessive enlargements.

This more recent work has been done with the synthetic estrogenic substance, diethylstilbestrol, which was snythesized in 1937 by Dodds and his coworkers,[1] and found to be of much greater potency than estrogen. Nobel[5] found that diethylstilbestrol has an inhibitory effect on the anterior pituitary gland similar to that of estrone, and duplicates exactly the action of estrone. The drug has been found to be well tolerated by the human in large doses and has a wide margin of safety. Its toxic effects are apparently of no particular significance, nausea being the chief offending symptom in a few cases.[11]

### RESULTS OF TREATMENT WITH DIETHYLSTILBESTROL

I have used this drug on seventeen patients to date, on the Tulane Service of the New Orleans Charity Hospital, and in the University Clinic. All men were white, ranging in age from 49 to 86 years, with an average of 63. Fourteen patients received stilbestrol diproprionate by intramuscular injection and three by mouth. In those cases receiving the drug orally, the effective dosage was considered to be half the administered dosage. All cases were benign hyperplasias and were non-infected except in one instance. Two patients complained of some nausea during treatment, and one had enlarged, painful breasts. There were no other reactions.

ANALYSIS OF TREATMENT AND RESULTS

| Total dosage | Total time of treatment | No. of cases | Results: Improved | Results: Unimproved |
|---|---|---|---|---|
| 400,000 units | 3 weeks | 6 | 4 | 2 |
| 600,000 units | 4 weeks | 3 | 3 | 0 |
| 800,000 units | 4 weeks | 2 | 2 | 0 |
| | 6 weeks | 5 | 2 | 3 |
| 1,600,000 units | 6 months | 1 | 1 | 0 |
| Totals | | 17 | 70% | 30% |

It may be seen from the above analysis that twelve patients, or 70 per cent, of those treated showed clinical improvement. Five of the patients thus improved received hormone therapy to the exclusion of all other forms of conservative treatment. Their improvement was checked and rechecked in terms of the amounts of residual urine before and after treatment, as well as by symptomatic improvement. In each instance the prostate appeared to be smaller on digital examination after treatment. They, therefore, apparently represent cases definitely influenced favorably by hormone therapy.

The remaining seven men showing improvement under therapy were in complete retention when first seen, and were catheterized and the catheter left in for a variable time, up to six weeks. The results obtained in these instances therefore are colored by the possibility that some of them might have obtained some improvement merely

from the instrumentation and bed rest. In fact two patients with carcinoma not included in this series were greatly improved by this program of treatment, although there is no reason to believe that the hormone has any beneficial effect on carcinomatous obstructions.

It is well known that physiologic rest for the bladder neck, with or without hot sitz baths and prostatic massage, will frequently relieve the congestive and edematous factors in a given case of prostatic obstruction, thereby affording the patient clinical relief and reducing the palpable size of the prostate. Clarke,[3] in a review of 93 cases of prostatic obstruction of all types and sizes, treated entirely by conservative means, found that 62 cases, or 68 per cent, were afforded definite clinical relief of symptoms for a period of time averaging three years. Furthermore it was at one time recommended that patients receiving hormone therapy be massaged at regular intervals to facilitate the emptying out of the prostate of any cast off epithelium resulting from the hormone influence. Here again however, the picture may be confused and the physician would be unable truly to evaluate the effects of the therapy, except in those instances where previous massage had failed to bring about clinical improvement. These facts are cited, not to attempt to discredit hormone therapy, but merely to warn of possible errors in the evaluation of the results obtained.

Five of the patients studied showed no improvement. These men were also afforded bed rest and catheterization, and yet failed to respond. These were, without exception, very large prostates and it raises the question as to whether the very large prostate is amenable to such treatment at all. Should such prove to be the case, then obviously this treatment should be reserved for early and comparatively small hyperplasias.

In three patients biopsy specimens were obtained before and after treatment was administered, and in no instance was any demonstrable change noted in the histology of the sections, although in one man the prostate was grossly reduced from a tremendous size down to 37 grams on removal, after treatment. Huggins,[6] however, says that in the dog the size of the gland is decreased by estrogenic injections, and that when estrogen and androgen together are given to the dog there occurs squamous metaplasia in the posterior lobe of the prostate, while the epithelium of the acini decreases in height to cuboidal or low columnar form. Kahle[4] also reports at least one case in which definite histologic changes in the prostate of the human were noted after treatment.

### ADMINISTRATION OF DRUG

With regard to dosage and the time interval during which the drug should be administered, it is at present thought that 800,000 units of diethylstilbestrol diprophionate should be given over a period of four to six weeks before its maximum effect can be expected. It will be noted that many patients in this series received less than the optimum amount of the drug and were treated for a shorter period of time than now considered necessary, and yet many of the improved patients were those receiving the least amount of the hormone over the shortest period of time. It is not yet known what the optimum daily or weekly dosage should be nor how long it should be continued, although von Haam, Mayer and others[11] have done much good work along these lines in women. They show that 10 to 30 per cent of the ingested amount of the hormone is excreted within the first 10 days after its administration.

Huggins[6] has found, in work on dogs, that excessive doses of estrogenic hormone tend actually to cause an increase in prostatic hypertrophy rather than regression.

At Tulane we have injected one lobe of the prostates of seven dogs directly with five milligrams of diethylstilbestrol diprophionate. These prostates were removed at intervals from one to four weeks, and no gross or histologic changes were seen in any instance, using the uninjected lobes for controls.

SUMMARY AND CONCLUSIONS

If such therapy can be substituted for operation, the benefit is obvious. Men of the prostatic age are never ideal surgical risks. They are often prepared to accept any form of treatment, proved or unproved, rather than submit to operation. Therefore, because of the possible consequences of failure, it is essential to be accurate in evaluating the evidence obtained in experimental work of this kind. In the absence of any trustworthy means of measuring actual changes in size of the prostate, the results here have been interpreted in terms of the fundamental clinical evidence of residual urine and ability to void. There were five instances in this series where the clinical improvement as measured above, was striking, if not dramatic, and these patients received no additional forms of treatment. It is this group, more than any other, which offers the best evidence of the value of this therapy.

However, there is much that must yet be done before the true value of the hormone can be evaluated. Among the problems included here are:

1. A determination of the sizes and types of prostatic pathology amenable to such therapy.

2. A determination of the dosage and time interval in administering the hormone, necessary to obtain maximum results.

3. An accurate method of measuring the size of the prostate before and after treatment.

4. A determination of the maintenance dose necessary to serve as prophylaxis against future growth of the prostate.

Thanks are due the Medical Research Department of the Winthrop Chemical Company, represented by Mr. Kenneth Smoot, for cooperation in supplying the diethylstilbestrol diproprionate used in this work.

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DISCUSSION

Dr. Edwin H. Lawson (New Orleans): This discussion will be limited to the histopathology of the prostate of patients who have received stilbestrol. In the normal adult prostate gland, the prostatic epithelium closes the irregular walls of the secreting units of the organ which are dispersed through the wrapped up closely contractile fibro-muscular stroma of the gland. According to most authorities the lining epithelium is more than one cell deep and the surface cells are usually of the highest cylindrical type, and, according to some authorities, the cells during the period of secretion enlarge and show an accumulation of granules at the free borders. Following the period of secretion the cells may be quite flat with a mere rim of protoplasm around about the nucleus. The changes which have been found, according to some investigators, due to the effect of stilbestrol upon the prostate, consist of flattening of the epithelium with desquamation into the lumen of the acini. Meanwhile, the stroma shows an increased amount of connective tissue producing a fibrosis. Through the kindness of Dr. Kittredge it was my pleasure to examine prostatic sections from ten men who had received stilbestrol. With the changes described as due to stilbestrol in mind, the size and shape of the epithelial cells was studied, the location of the nucleus within the cell, and changes in the stroma as regards fibrosis and edema were considered. After summing up the changes it was thought that two of the ten slides exhibited characteristics due to stilbestrol, two of the slides did not show a conclusive change but were suggestive. After speaking with Dr. Kittredge it was found that of the four slides two patients had

received stilbestrol and two had not. This same result had been obtained by other individuals studying the same ten slides. It has been my experience in studying sections from prostates that such changes as supposed to be due to stilbestrol have been found long before stilbestrol was discovered. To draw a conclusion from such limited experience is, of course, hazardous, but to say that the above mentioned histologic changes are the characteristic effects of stilbestrol is questionable.

Dr. Max M. Green (New Orleans): I think Dr. Kittredge's paper is very timely. Diethylstilbestrol offers something definite to give older men; both those who will later come to operation and some few who might not be able to stand operation. We are very much encouraged by the results which we have been getting on the L. S. U. service at Charity Hospital.

Since Dr. Kahle reported on a series of cases, we have treated some 17 more patients to whom stilbestrol has been given. Ten of these patients were given rather large doses of stilbestrol, shortly before operation, with the object of noting whatever microscopic changes were to be seen. In seven of these men stilbestrol was given over varying days, up to four weeks, being given 10 to 60 milligrams. The dosage on our service is higher than that given in private practice in other hands. As much as five milligrams were given at one time with the idea of trying to produce definite effect on the prostate; for those on whom we might do biopsies.

Regarding the clinical improvement seen in these patients of the 17 cases I cite, there was definite reduction of residual urine. Similarly by process of estimation, rectal examination, the size of the prostate was reduced in some glands measuring ten by ten centimeters, down to possibly three by three centimeters. I think, by that, we can not overlook results shown in these particular cases on our service.

The dosage of stilbestrol, of course, is still very much indefinite. It would be suggested, however, that if it would be given, give it on successive days, say for possibly five days, giving a milligram a day in order to get effect on the pituitary which we think is the intermediate agent; then decreasing to twice weekly until maximum effect is seen and then give a milligram every two weeks to continue the effect which you have produced on this gland. We know this is replacement therapy and when the treatment is stopped there is recurrence of symptoms.

I wonder if catheter drainage actually clouds the picture. Certainly it reduces edema but does not reduce hypertrophy of the prostate or residual urine. We feel that this drug works best on the small glands and in small hypertrophy.

Dr. P. J. Kahle (New Orleans): At the time of our preliminary report, we presented a study of fourteen patients, five with small glands and nine with large ones. The nine patients with large glands were given the stilbestrol principally for the study of tissue changes which might occur as a result of the medication. The conclusions that we came to at that time were that there were definite changes in the prostatic tissue following administration of stilbestrol. The small glands definitely regressed; the same was true with the moderately large. In the instances of the large prostates there were an appreciable number of glands returning to normal; two of those measured approximately ten by ten at rectum after administration of stilbestrol. Both of these patients had preliminary drainage, as treatment is not carried out until bladders are drained for a month or so and there is no appreciable change noted in the prostate. Measurements of prostate are made at the time of treatment. Stilbestrol is given after prolonged drainage. In two of the cases mentioned the prostate was removed and these large glands weighed, at the time of removal, 17 grams. Those patients were operated on by Dr. Vickery who felt the glands were normal in size.

We do not feel that the large glands will resolve entirely; probably due to the amount of stroma present, or possibly action on the glandular elements.

Although the number of cases is small, we must remember the fact that there are changes in the prostate definitely due to stilbestrol. Some prostates have been found, when the prostate has not received treatment, with similar changes. We are not quite so sure whether there is actual effect on the prostatic glandular element of the epithelium. This is barely possible as we know that prostates will not continue to grow at a regular rate, they will even regress; it is possible that in individuals not treated that there is a difference in the estrogen balance. Some of these glands may show changes, although the patient has not received treatment. To clear this point we are now proposing to take some patients, resect at least half of the glands, give treatment with stilbestrol and then study the histology after administration of treatment—24, 48 and 72 hours. I might mention that since the preliminary report was made, ten men with small glands were selected in private practice, with 100 per cent improvement in residual and in size. I believe we have had at least two out of seven discharging glands normal at rectum and residual urine reduced in amount. Those cases were referred to the clinic. In other men, with drainage and so on, it was impossible to tell the benefit of the treatment. I do not believe other cases were as completely regressd. Whether or not the glands will further regress with prolonged treatment, we are not in a position to tell. There is still stroma which remains and as far as we know it has not been affected by the stilbestrol.

Dr. Eugene B. Vickery (New Orleans): My experience with the use of stilbestrol is not enough to make it possible for me to have formed any

definite opinion about it. Dr. Kahle has said that I was instrumental in removing two of these glands which weighed only seventeen grams. They were removed *in toto*, shelled out without difficulty and for that reason we felt they were not of the inflammatory type. Those patients came to the hospital with a large amount of residual urine and for that reason it seemed to me there was some favorable influence on the prostate by the stilbestrol. Certainly it is a fact that we can hardly yet form definite opinion in this regard. The preparation will have to go through the hands of a good many men and a good many patients will have to be treated before we can form a definite opinion about it. However, I certainly wish to say that I have seen some evidence of improvement by the use of stilbestrol.

Dr. M. H. Foster (Alexandria): It has been over six years ago on a visit to the Pacific Coast that I heard a physician at Alcatraz, when giving estrogenic mush, report not only considerable clinical improvement but dysuria relieved, frequency lessened and complete sense of well being restored. These men even discarded their glasses. Despite all that has been published, I have never been satisfied that I have produced improvement by the administration of estrogenic hormones. I think we will still have to wait for more evidence before coming to definite conclusions concerning hormone therapy in prostatic hypertrophy.

Dr. W. E. Kittredge (in closing): I can testify that testicular mush, as mentioned by Dr. Foster, does improve vision. It also improves skin texture of elderly men. I have personally seen it. It did more for acne in young girls in two cases than anything else tried. It does not reduce the size of the prostate or in any way fundamentally affect that.

As for our work with estrogen, I would like to remind you that this is still in the research and experimental stage. There is much that we do not know about it. There is a great deal which happens to confuse the results we see. I am willing to say as of today that the drug certainly has promise, because there are indisputable cases which are considerably improved after its use. As I said before, there is a great deal we have yet to know and understand before becoming dogmatic. We must know the histopathologic changes, on what gland to use it, how much to give, how long to continue treatment, and the proper maintenance dose. Last but far from least, we must know how accurately to determine the size of the prostates treated. There have been suggested several more or less ingenious methods of measuring the prostate while in the patient, by instrumental means. One of these may prove to be reliable. We certainly do need some such procedure actually to check the size of the gland before and after treatment.

## USE OF SULFAGUANIDINE IN A CONTROLLED SERIES OF TYPHOID CASES

WILLIAM M. HALL, M. D.
SHREVEPORT

Due to recent reports of the effect of sulfaguanidine on typhoid and typhoid carriers, this drug was used in 20 patients with proved typhoid at the Shreveport Charity Hospital in June, July, and August of 1941. A similar number of proved cases in the hospital at the same time (in several instances in the same family) receiving no sulfaguanidine were taken as controls. The patients who received sulfaguanidine were not selected but were run of the mill admissions. The only cases included in both groups were those having positive stool cultures and showing agglutination in a high titer of both the O and H antigens. The drug was used in the recommended dosage of 0.10 gm. per kilo the first dose and 0.05 gm. per kilo every four hours thereafter. It was stopped in all cases as recommended after 12 to 14 days and in six instances was resumed after a lapse of one week. Blood levels of sulfaguanidine averaged from 1 to 2 mg. per cent as compared with the recommended level of from 1 to 5 mg. per cent. Supportive treatments, including transfusions, were given all patients as needed, regardless of sulfaguanidine therapy.

The period of illness before hospitalization for both series averaged 14 days, the extreme being two days and 28 days. The average total duration of illness was 61 days for those persons receiving sulfaguanidine, and 48 days for the controls; three negative stools on successive days were obtained before the illness was considered terminated. Two of the patients receiving sulfaguanidine were discharged as intractable carriers. The average length of time from onset until the patient was afebrile was 53 days for those receiving sulfaguanidine, and 42 days for the control group. The patients receiving sulfaguanidine averaged a 48 day hospital stay and the controls a 36 day hospital stay.

The pulse rate was elevated in proportion to the degree of fever and in no instance

was it recorded as being slow, as described in some texts. Sulfaguanidine had no effect on the pulse rate.

There was a very definite leukopenia exhibited in all the cases of both series. There was no adverse effect from the sulfaguanidine on the blood picture of any person who received it.

There was no striking reduction in the temperature of any of the patients while on sulfaguanidine. In 14 of the cases there was no drop at all and in the other six the fall was gradual and in no way distinguishable from a similar fall in the controlled group of the same duration of illness.

The positive stools were reversed in only two patients during the period of sulfaguanidine administration. Of the other 18 patients, 16 became negative later, one after multiple gallbladder drainages, and two were dismissed as carriers.

There was no pronounced salubrious effect attributable to the administration of sulfaguanidine, those few patients who were symptomatically improved were paralleled by similar improvement in controls of the same stage of illness.

Complications were numerous in both series. Intestinal hemorrhage occurred five times in three patients of the sulfaguanidine group and one time in the control series. Severe recrudescences occurred five times in four of the sulfaguanidine group and four times in four patients of the control group. Myocarditis occurred in one person in each series. An abortion occurred in one woman in each series. Bronchopneumonia and a decubitus ulcer complicated one case in the sulfaguanidine group. There were no instances of perforation. There were two patients dismissed as carriers, one was seven months' pregnant, and both were in the sulfaguanidine series. There were several instances of rather profound anemia due to intestinal hemorrhage and requiring repeated blood transfusions. Eight transfusions were given to five patients in the sulfaguanidine group and sixteen transfusions were given to six patients in the control group. The favorable results obtained with transfusions in these very ill patients in both series was most gratifying.

SUMMARY

The use of the drug did not decrease the duration nor the degree of morbidity, produced no fall in temperature, gave no marked symptomatic improvement, and did not cause a reversal of positive stool cultures. The incidence of complications was unaffected. Sulfaguanidine as judged by this controlled series was without value in the treatment of typhoid.

## THE DIAGNOSIS AND TREATMENT OF GASTRIC SYPHILIS*

### WITH A CASE REPORT

GRACE. A. GOLDSMITH, M. D.†
NEW ORLEANS

Syphilis of the stomach is relatively rare but it merits more consideration in the differential diagnosis of gastric lesions than it has received in the past. The criteria necessary for establishing the diagnosis of gastric lues have varied according to the point of view of the investigator, with insistence by some on histopathologic or bacteriologic confirmation, while others have considered that a clinical diagnosis can be made without laparotomy. The improved methods of diagnosis in recent years have facilitated recognition by the clinician and in a number of instances gastric syphilis has been proved beyond reasonable doubt without microscopic examination of tissue.

#### INCIDENCE

Considerable controversy exists regarding the incidence of syphilis of the stomach. While many patients with syphilis have gastric complaints, only a small percentage of these have true luetic lesions in the stomach. Roen and Thorner[1] stated that gastric symptoms may be due to the general systemic infection, may be referred from other involved organs such as the liver, or may be manifestations of central

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nervous system syphilis. Stokes[2] reported that of 200 patients with late or latent syphilis who had gastric symptoms, 75 per cent had neurosyphilis, 10 per cent organic lesions of the gastrointestinal tract and 5 per cent had true syphilis of the stomach. In a series of 10,000 syphilitic patients, he found 60 cases of gastric lues. Smithies[3] recorded the incidence as one case of syphilis of the stomach in every 330 gastric cases. The frequency according to O'Leary[4] was less than 0.3 per cent in leutic patients seen at the Mayo Clinic. Syphilitic lesions of the stomach are even more rarely encountered at postmortem examination. Merrill[5] found 10 cases in 18,000 gastric examinations at the Massachusetts General Hospital; Fitts[6] no cases in 500 autopsies on negroes in the South, and Turnbull[7] only one doubtful case in 13,000 examinations in London. Meyer and Singer[8] stated that the incidence at autopsy underestimates the real incidence. They found four cases at operation during a period in which no gastric syphilis was found in 5,000 autopsies, in 10 per cent of which there was evidence of syphilis. The conclusion is that gastric lues tends to heal and in doing so, loses its specific characteristics.

PATHOLOGY

O'Leary[9] has divided gastric syphilis into several types: (1) The single gumma; (2) multiple gummata in the form of the nodular ulcerative syphilid; (3) diffuse nodular infiltration; (4) chronic fibrosis, or cirrhotic stomach. As Laird[10] has stated, the disease begins as a gumma in the submucosa and extends into the other coats. Through the breaking down of the gumma, ulcers and later scars may form. Meyer and Singer[11] have described in detail the characteristic macroscopic pathology which is of great value in diagnosis, especially to the surgeon at the time of operation. There is a thickening of the stomach wall most often in the prepyloric region, less commonly in the media and seldom in the cardia. There is first a localized plaque-like infiltration in the submucosa which, as it extends, leads to ulceration. Finally, there is contraction of the involved segment into consecutive cylindric narrowings. A diffuse leather bottle stomach is rarely found. The consistency is soft in comparison to carcinoma and more fibrous than neoplastic. The thickening is uniform but fades imperceptibly. Cross section of the wall shows the coats distinctly, revealing a thick edematous submucosa without extension into the other coats. Multiple serpiginous shallow ulcers with raised edges may be seen. Microscopically, there is diffuse infiltration of the entire wall, but especially of the submucosa, with lymphocytes and plasma cells. The infiltration shows a conspicuous perivascular arrangement. At times gummatous nodules composed of epithelioid cells are seen, with occasional multinucleated giant cells. A proliferative endarteritis is commonly found. Williams and Kimmelstiel[12] described a pan-phlebitis, first noted by Fraenkel, which can be detected only by special stains for elastic fibers. They consider this periendophlebitis more indicative of syphilis than are other microscopic findings.

It is agreed by many authors, Roen and Thorner,[1] Harris and Morgan,[13] Downes and Lewald,[14] and others, that biopsy can not be depended upon for a positive diagnosis, but that it is extremely valuable in eliminating carcinoma and in supplementing clinical findings.

For many years there has been controversy regarding the necessity of finding the *Treponema pallidum* in gastric tissue in order to make an absolute diagnosis of syphilis. Very few investigators, in spite of diligent search, have been able to demonstrate spirochetes in lesions of the stomach. McNee[5] reported spirochetes in Levaditi stained sections from a gummatous stomach. Harris and Morgan[13] inoculated the testicles of rabbits with an emulsion of gastric tissue from a patient with syphilis of the stomach and produced lesions in the rabbits which were typical of lues. From these lesions they recovered spirochetes. However, Singer and Dyas[16] and others have shown that spirochetes from the mouth may be secondary invaders

of the stomach and that the differentiation of syphilitic and saprophytic spirochetes is exceedingly difficult. Singer[17] has also stated that spontaneous spirochetal disease occurs in rabbits due to *Spirochaeta cuniculi*, which organism is practically indistinguishable from *Spirochaeta pallida*. It may be concluded that the demonstration of spirochetes in a gastric lesion does not prove that the condition is syphilitic.

### CLINICAL FINDINGS

The clinical manifestations of syphilis of the stomach are protean and dependent on the extent of the pathology, but most often they resemble those of peptic ulcer or carcinoma. Eustermann,[18] who has reported 93 cases, believes that with careful study a correct clinical diagnosis can be made in most instances without microscopic examination of tissue. While gastric lues can occur in any age group, it is most frequently seen in the third and fourth decades. In Eustermann's series, the average age was 36, as compared to an age of 45 for peptic ulcer and 54 for carcinoma. The symptoms which occur most frequently are abdominal pain, vomiting, and loss of weight and strength. Nausea and anorexia are less frequent, although a capricious appetite is not uncommon. The abdominal pain is usually located in the epigastrium and may be constant. It is often initiated or aggravated by the intake of food and may be more severe after the ingestion of solids than of liquids. It is unrelieved by alkalis. There is evidence of low gastric capacity as small meals may be tolerated, whereas large ones cause acute distress. Vomiting will usually relieve the discomfort to some extent. There is rarely any evidence of gastric retention. A few patients show an ulcer syndrome of pain — food — ease but the sequence is not as regular as in duodenal ulcer and a regimen of diet and alkalis will not cause a remission. While weight loss may be severe, it is less rapid than in carcinoma, and extreme cachexia is rare. Hematemesis and melena occur less often than in either ulcer or carcinoma. The duration of symptoms varies from several months to many years with an average, according to Eustermann, of two years. The course is progressively downhill. In spite of the severity of symptoms and the marked weight loss, an abdominal mass is infrequent in contradistinction to carcinoma of similar duration. Anemia may occur but it develops less rapidly than in carcinoma, and is seldom as severe. Gastric analysis shows in most instances an achlorhydria or a hypoacidity, even after histamine stimulation. The Wassermann reaction is positive in a very high per cent of genuine cases and other evidence of lues may be present. Stokes[2] found a positive Wassermann in 37 of 40 cases and in 25 of the 40 there was other evidence of syphilis. The spinal fluid Wassermann is occasionally positive when that of the blood is negative.

The findings on x-ray examination which are suggestive of gastric syphilis have been summarized by Carman,[19] Moore and Aurelius,[20] McPeak,[21] and many others. The location is prepyloric in 70 per cent, median or hour-glass in 22 per cent and diffuse in 8 per cent, according to Moore and Aurelius.[20] In the median of hour-glass type, there is a smooth annular constriction or an extensive defect giving a dumb-bell shape. In the prepyloric type the defect is almost always concentric and symmetrical with marked contraction and progressive narrowing of the lumen toward the pylorus. When there is diffuse involvement the entire stomach is contracted, leaving only a narrow smooth canal. The pylorus is gaping, causing the duodenal cap to appear larger than normal. If an ulcer is present, the niche rarely penetrates beyond the normal limit of the gastric lumen.

The features which most radiologists recognize as important in the diagnosis of gastric syphilis are a diminution of gastric capacity, a rapid emptying time, rarely any evidence of retention, the pylorus free rather than obstructed, hour-glass stomach, stiffening of the gastric wall, absence of peristalsis in the involved area, absence of a niche, accessory pocket, or typical incisura, the classical signs of gastric ulcer, a gross filling defect without a corresponding palpable mass, and a patient under the

cancer age who is not ill in proportion to the involvement seen on x-ray examination. The last two findings are considered the most important.

Gastroscopic examinations have been performed in a few patients with syphilitic lesions of the stomach. Carey and Ylvisaker[22] reviewed the literature on this phase of the subject and reported their own findings. The mucosa is usually atrophic, although hypertrophic changes have been described. The stomach is contracted with thickened stiff walls. Normal rugae are effaced and there is obliteration of anatomic landmarks. The lumen is difficult to distend by inflation. The mucosa is smooth and pale, although superficial ulceration and hemorrhagic areas have been described. Peristalsis may be absent in the involved areas.

### TREATMENT

One of the most important methods which may be used in the diagnosis of syphilis of the stomach is the therapeutic test. If the history, clinical and laboratory findings are suggestive of gastric lues, the patient is given specific therapy in the form of arsenic and either bismuth or mercury, together with large doses of iodides. The response is remarkable if the lesion is syphilitic. The appetite improves. Pain and vomiting cease and there is a rapid gain in weight. There is a difference of opinion among authorities in regard to the time during which the test is to be applied. Stokes[2] feels that following two injections of 0.3 gram of arsphenamine, three days apart, there should be some improvement. Eustermann[18] and O'Leary[2] advocate six weeks of antiluetic therapy. During the trial period no other treatment is given except for small frequent feedings. The patient is ambulatory if possible. In addition to a rapid disappearance of symptoms and a gain in weight and strength, there may be improvement in the radiologic findings in one-half of the cases. Later in the course of therapy, the roentgenologic signs may become more marked due to extensive fibrosis occurring with healing. Some patients who have advanced lesions may become free of symptoms but will show no change on x-ray examination.

In the treatment of patients with gastric syphilis, Moore[23] recommends a therapeutic period of 15 to 24 months, and O'Leary[24] states that patients should be followed for a minimum of two years. Arsphenamine may be given safely without preliminary preparation with bismuth or mercury. Eustermann[18] sums up the results in his 93 cases as follows: 36.8 per cent clinically cured, 42.5 per cent much improved, 10 per cent unimproved and 11 per cent slightly benefited. When obstructive symptoms are present, operation may be indicated but even in extensive lesions medical therapy may produce astounding results. When there is marked deformity of the stomach a resection may be necessary. Surgical procedures should, however, be as conservative as possible and antiluetic therapy prior to operation shortens the convalescent period according to Stokes.[2] The danger of prolonging a therapeutic test unduly lies in the fact that the diagnosis may be erroneous and valuable time is lost if the patient has carcinoma. There may be a non-specific response to arsenicals in patients with lesions other than those of syphilis.

The following case of gastric syphilis is reported because of the characteristic clinical and laboratory findings which were present, while at the same time, the location of the lesion was unusual in that there was extensive involvement of the cardiac portion of the stomach. The diagnosis was corroborated by histopathologic study.

### CASE REPORT

A white female, aged 39, was admitted to Charity Hospital on November 18, 1940, complaining of epigastric pain and vomiting. Her history dated back four years when she was delivered of a dead baby by cesarean section. Since that time she had noted abdominal pain which appeared 15 to 20 minutes after meals and occurred at irregular intervals. There was a sense of fullness in the epigastrium, accompanied by eructation and vomiting with subsequent relief of distress. Only food recently eaten was found in the vomitus. A year prior to admission to the hospital all symptoms became worse. Food caused discomfort immediately after eating and fear of pain led to a very inadequate diet. At first only solid foods caused

distress while later even liquids produced pain. There had been a weight loss of 27 pounds. After prolonged vomiting, an occasional blood streak was noted but there had been no gross hematemesis and no melena. There was no history of primary or of secondary luetic lesions and the patient had had four normal children prior to the stillbirth in 1936.

Physical examination at the time of admission to the hospital showed an emaciated, somewhat dehydrated, anxious and alert woman who did not appear anemic or cachetic. The temperature was 97.8° F., pulse rate 85 per minute, respiratory rate 20 per minute and blood pressure 95/70. A few small lymph nodes were palpable in the posterior cervical chain. The pupils reacted to light and accommodation. The tongue was slightly atropic and the pharynx reddened and granular. The heart and lungs showed no abnormalities. There were no palpable masses in the abdomen nor could the liver or spleen be felt. Vaginal and rectal examinations were normal except for the presence of hemorrhoids. A complete neurologic survey showed no abnormalities except for hypoactive patellar reflexes.

Laboratory findings were as follows: Urinalysis, normal. Blood count: Erythrocytes 4,000,000; hemoglobin 70 per cent; leukocytes 4,500; differential count, normal. Kline and Kolmer tests for syphilis, strongly positive on two occasions. Gastric analysis after histamine, free acidity, 0; total acidity, 8. Stool, weakly positive for occult blood. Roentgenologic examination of the stomach after a barium meal showed an hour-glass deformity just below the cardiac orifice with what appeared to be hypertrophic rugae. A re-ray after administration of belladonna was requested. The subsequent x-ray study showed "a large organic hour-glass contraction of the vertical part of the stomach with considerable narrowing of the lumen which at the narrowest was not over 1 cm. in diameter (fig. 1). At six hours there was a small amount of retention." The radiologist expressed the opinion that the stenosis was organic probably due to syphilis, and that carcinoma was unlikely.

Figure 1. X-ray of the stomach in a patient with gastric syphilis.

Gastroscopic examination was reported as follows: "The pylorus and angulus appeared to be normal. The anterior wall at depth #1, was very edematous, and there were numerous mucosal hemorrhages. The posterior wall and greater curvature showed injected mucosa. In depth #2 nothing could be seen." The impression was chronic superficial gastritis.

A diagnosis of gastric syphilis was made and antileutic therapy instituted. She received injections of neoarsphenamine once a week for six weeks, beginning with 0.2 gm. and increasing to 0.45 gm. She was given thiobismol 0.2 gm. twice a week and iodides were administered daily. She improved remarkably, gaining 10 pounds in weight in a period of six weeks. Pain and vomiting were diminished but still occurred occasionally. She was discharged from the hospital to continue treatment in the outpatient clinic. An x-ray examination of the stomach three weeks after beginning therapy showed that no change had occurred since the original study (fig. 2). Shortly after she returned home, her symptoms recurred and she again began to lose weight. On readmisison to the hospital, a surgical consultation was obtained and laparotomy advised. At operation, a nodule which was found on the liver, was removed and shown to be a gumma. The stomach was markedly contracted and thickened in the cardiac and fundal portions, and a total gastrectomy was performed with enteroenterostomy and a Wetzel jejunostomy.* Postoperatively the patient had a somewhat stormy convalescence which included several convulsions on the eleventh to the four-

*The surgical aspects of this case will be reported in another article by the Department of Surgery.

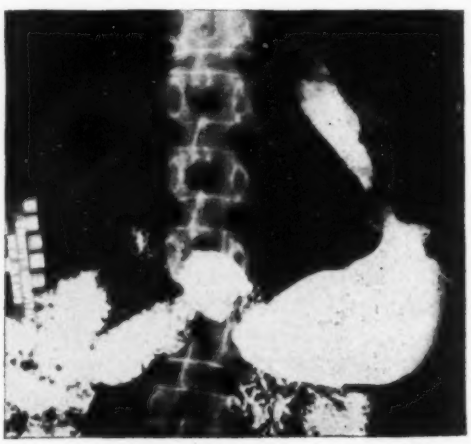

Figure 2. X-ray of the stomach in a patient with gastric syphilis after three weeks of antiluetic therapy.

teenth postoperative days and evidences of cardiac embarrassment. The electrocardiogram, which was normal prior to operation, showed ventricular bigeminy, low QRS complexes, and low T-waves. However, on the eighteenth postoperative day, she was well enough to be up in a wheel chair and thereafter rapidly improved. At present she feels well and is gaining weight. The blood count is entirely normal but will be checked at intervals for the possible development of a macrocytic hyperchromic anemia in view of the total gastrectomy. She is being treated for syphilis in the outpatient clinic.

The gross and microscopic pathologic findings in the stomach were reported by Dr. Palik as follows: The proximal half was thicker and smaller than the distal half. The serosal surface appeared puckered and lusterless. There were two strictures. The first, at the cardiac end, was just distal to the esophagus and the lumen at this point measured 2.3. The lumen at the site of the second stricture measured only 1.2 cm. In this area the mucosa was puckered and retracted. The stomach wall was thick and leathery and the cut surface pale gray, smooth and glistening. The mucosa between the strictures was less pliable than elsewhere and normal rugae were absent. On microscopic examination, the submucosa was seen to be markedly thickened due to an extensive fibroblastic proliferation. There were numerous foci composed of lymphocytes, plasma cells, eosinophils and giant cells. This reaction was most marked in the region near the esophagus and in the stenotic areas. A number of the blood vessels were surrounded by collars of lymphocytes and plasma cells. Endarteritis was present in the areas of stenosis. The muscularis was of normal thickness but showed a moderate degree of interstitial fibrosis and infiltration with round cells. The process extended to a lesser extent into the subserosa. The mucosa showed no notable abnormalities except moderate attenuation in the stenotic areas. Sections through the distal part of the stomach showed no abnormalities of the mucosa, muscularis or serosa. The pathologic diagnosis was linitis plastica syphilitica.

## COMMENT

This case illustrates the clinical, pathologic and roentgenologic findings in advanced syphilis of the stomach. There was a long history of pain, vomiting and loss of weight, with progressive increase in symptoms, in a 39 year old patient with syphilis. There was achylorhydria, absence of an abdominal mass, a positive Wassermann reaction, and characteristic x-ray findings of gastric lues. Corroborative evidence of syphilis was obtained by macroscopic and histopathologic examination of the stomach which was removed at operation, and by the finding of a gumma of the liver. The patient improved considerably on antiluetic therapy for a brief period of time and then symptoms recurred. Perhaps relapse was due to increased fibrosis and contraction of the stomach following even this small amount of treatment. A surgical operation was necessary in order to rehabilitate the patient.

## CONCLUSION

It is worthy of emphasis that the diagnosis of gastric syphilis can be made clinically if the possibility is kept in mind. The condition is probably not as rare as was formerly supposed, although it is infrequent. In patients presenting a positive Wassermann, gastric symptoms and roentgenologic evidence of structural deformity, syphilis of the stomach should be the primary consideration until some other diagnosis is proved.

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# UNUSUAL FOREIGN BODY (FORK OF A BICYCLE HANDLE) IN THE BRAIN*

## CASE REPORT*

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AND
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Foreign bodies in the brain are by no means rare, but certain circumstances sometime warrant the report of a case, as a review of the recent literature will show[1]. In the case herewith reported the nature and extent of the injury were unusual, as was complete recovery under the circumstances.

### CASE REPORT

A colored boy, 13 years of age, was brought into the accident room of Charity Hospital of Louisiana at New Orleans shortly after a fall from a bicycle. A portion of the front fork of the machine had penetrated the brain through the left orbital cavity. Later, when the boy was able to give a coherent history, he stated that as he was riding his machine over a rough road, he struck a large hump or stone, the bicycle slipped from under him, and he was thrown over the handlebars. At that moment the machine, like the parson's one-horse shay, apparently disintegrated, and he found himself with a portion of the front fork penetrating his head just above the left eye.

The boy was brought into the accident room on a stretcher, and the ambulance surgeon was carefully supporting the fork and front wheel of the bicycle to avoid further trauma. The patient was conscious and was not shocked; indeed, his general condition, in view of the character of the injury, was remarkably good.

Roentgenograms made immediately with a portable unit showed that a portion of the fork had penetrated the left frontal lobe as far back as the coronal plane. Since it was almost impossible to move the boy without disturbing the foreign body it was decided to remove it in the accident room, after which further treatment could be carried out in the operating room. Nitrous oxide-oxygen anesthesia was therefore administered at once.

The fork was firmly in place in the head, but after removing the wheel it was possible by careful, gentle manipulation first to loosen the fork and then to remove it. A small amount of brain tissue extruded from the open wound in the roof of the orbit.

The defect was later enlarged in the operating room, exposing a rent in the dura through which softened brain tissue extruded. The tissue was gently removed by suction and sponging, further débridement was carried out, and an iodoform pack was laid loosely in the wound. At the end of the operation the patient's condition was still good, though his respiration was 24 and his pulse rate 192, and the systolic blood pressure had risen to 150.

The general condition remained good all through the night except for occasional vomiting. The following morning the boy was mentally clear and fairly comfortable except for a headache, which

*Read before the Orleans Parish Medical Society, July 14, 1941.

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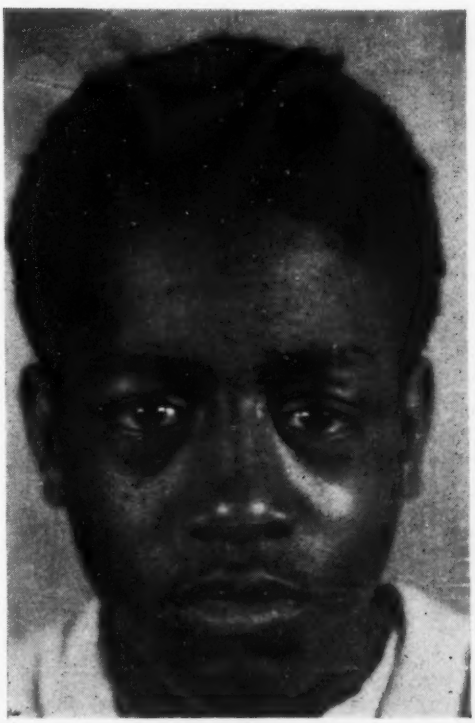
was not very severe. He had voided and was retaining fluids. Some weakness was apparent in the lower right side of the face, but the fundi were normal and the extremities showed no weakness whatsoever. Sulfapyridine was administered as a prophylactic measure.

The wound was dressed daily and the pack partially withdrawn the first and second days; on the third day it was completely removed. There was no bleeding and no signs of infection were evident. The fundi remained normal.

On the thirteenth day, just as the boy was about to be discharged, he had two generalized convulsions, associated with loss of consciousness, within an hour. The spinal fluid was found clear, under pressure of 260 mm. of water; it contained no globulin and less than 10 cells per cu. mm. The Wassermann and colloidal gold reactions were negative, and the culture showed no growth. The temperature was normal. Sulfapyridine was discontinued at this time. A check of the spinal fluid two days later showed it to be normal in all respects.

When the boy was discharged from the hospital, on the nineteenth day after the accident, he seemed completely well. The wound was entirely healed. The slight lag of the right lower face had persisted, and there was a slight ptosis on the left, but ocular movements were free, there was no diplopia, the fields and fundi were normal, and visual acuity was 20/20 for each eye. The remainder of the neurologic examination was negative.

The patient returned for examination at the end of a month. At this time neither facial weakness nor drooping of lid could be observed, and the small healed scar was barely noticeable. He considered himself perfectly well, and follow-up examinations show that he has remained well to this time.



COMMENT

Among numerous interesting reports of foreign bodies in the brain which were encountered in reviewing the literature, only one was found which concerned entrance of the body into the orbit. In this instance, mentioned by Foss[2], a pencil had traversed the orbit and entered the frontal lobe. Foss also found in the French literature the report of a case in which a knife blade penetrated the frontal lobe "across" the orbit; in this instance the foreign body seems to have passed above the cavity rather than to have actually traversed it. Foss' own case is quite unusual: A crochet needle entered the posterior fossa by way of the

mouth and the jugular foramen and transfixed the cerebellar lobe. A similar case was reported by Key and McCrummen.

SUMMARY

A case is reported in which one fork of a bicycle handle entered the brain through the orbit. It was removed, the wound was débrided, and complete recovery ensued.

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DISCUSSION

Dr. Dean H. Echols (New Orleans): It is a good thing that Dr. Hart brought photographs of this amazing case or we might not have believed it. Dr. Hart asked me about the foreign body which was removed from the brain of a patient on the Tulane service a year or so ago. I looked up the specimen and will pass it around. The patient was stabbed with a penknife in a quarrel. The blade broke off near the handle after piercing the temporal bone, dura and brain. No one knew, except the man with the knife, that the blade was missing. Some weeks later the boy came to the hospital because of headache. X-rays revealed the foreign body. To remove it we used the old cooky-cutter type of trephine, made a button of bone around the blade and lifted it out. I have it here and will pass it around.

## DR. ANDREW W. SMYTH

### A BIOGRAPHICAL SKETCH*

R. G. ALLEN
NEW ORLEANS

Dr. Andrew Woods Smyth was born at Castleberg in the County of Tyrone, Ireland, in the year 1832. When he was seventeen years old he came to New Orleans where he found work in a drug store at the corner of Camp and Poydras Streets. He soon began to study medicine, and in 1858 he was awarded the degree of M. D. from the New Orleans School of Medicine, a new school which was said to be cheap and very easy. From 1862 to 1887 he was connected with the Louisiana State Board of Health and was for many years house surgeon of the Charity Hospital.

Smyth was a most peculiar, odd, and disconcerting man. It is said that he was hard to converse with, due to the fact that he stammered badly. His face was always clean shaven, his eyes bright and piercing; only a slight and fleeting side smile betrayed his Irish strain and the wit that were his. His surgical judgment was said to be irregular and uncertain.

He was a great lover of the microscope, and when Beck, the celebrated London maker, visited New Orleans, Smyth paid him one thousand dollars for one of his most expensive instruments.

Those who knew him said that he was timid and shy with women. He could not talk to them, did not understand them, and could not handle them. In spite of this alleged timidity, when he was a middle-aged man he became engaged to a lovely, frail Creole girl. He operated on her for a tumor of the neck and she died of tetanus. This tragic event crushed Smyth's rugged nature, and he would not speak of it even to his closest friends. Time proved to be a great healer and he married the granddaughter of Senator Bouligny of Louisiana. The union was blessed with one child, a beautiful daughter. According to writers who knew him, however, he evidenced no particular paternal affection.

In 1863 the Federals took possession of New Orleans, and General Banks put Smyth, a Republican, in charge of the Charity Hospital, where he remained for almost thirteen years. It is said that he was "a

*Read before the scientific meeting of the Orleans Parish Medical Society, January 27, 1941.

thorough autocrat of a rather despotic turn, backed by the Federal bayonets and the notorious carpetbag governors."

It was here in 1864, at the age of 32 years, that he performed his famous operation, the successful ligation of the innominate artery to cure an aeurysm of the third portion of the subclavian. Having been the first to cure such an aneurysm, Smyth immediately became celebrated. He was highly honored and it was some time before his glory was shared by another surgeon who cured the same sort of aneurysm by ligating the innominate artery.

This was truly the first great original surgical work ever done in Louisiana, and other than this bold operation, Smyth never performed any piece of work of unusual merit. It is for this surgical work alone that he is remembered.

The patient, William Banks, was a mulatto of 32 years, who had "strained" himself in holding to an anchor to keep from drowning after a collision at sea. At the time of the operation the tumor had existed for four months and had developed to the size of a small orange.

On May 15, Smyth ligated the innominate artery a quarter of an inch below its bifurcation, and the carotid artery an inch above its origin, the latter to prevent regurgitation. Fourteen days later, the ligature around the carotid artery sloughed, and the patient had a severe hemorrhage and developed syncope. About 16 ounces of blood was lost before the hemorrhage ceased of its own accord. For a period of thirty-seven days hemorrhage recurred at intervals and was temporarily arrested by filling the wound with shot, until on the fifty-first day after the operation a terrific hemorrhage took place, stopped by syncope.

Smyth believed that the hemorrhage came from the distal side of the ligature, and from the subclavian artery, so he determined to ligate the right vertebral artery which is the principal branch carrying a retrograde current into the subclavian artery. This he did on July 8. On July 9, the shot were removed, and no further hemorrhage took place. The patient felt entirely well on September 15, except for a weakness in his right arm. Five years later he was enjoying the best of health and the cure was in every way complete.

The patient became a painter, which required considerable use of his right arm. Ten years later the tumor recurred and was larger than before. Smyth then ligated the internal mammary artery, but without benefit. The sac was threatening to burst, so it was opened with the hope of plugging the opening of the aneurysmal artery. The hemorrhage was so profuse that the opening of the vessels into the sac could not be seen, and the operator tried to plug the entire wound, but in vain. The patient died of hemorrhage a few days later.

Souchon, the late professor of Anatomy and Surgery at Tulane University School of Medicine, performed the autopsy, and dissected out the specimen which is now in the Army Medical Museum in Washington. In one of his articles, Souchon relates the thrilling and peculiar manner in which he secured the specimen. The mulatto had no family, but he belonged to a negro organization which clamored for the remains of their celebrated brother in order that they might bury him in the style befitting such an eminent personage. As the work of preparing the specimen was nearing its end, Souchon heard a great row in the waiting room of the dead house, and over all the voices he recognized that of Smyth who was trying to quiet them. As Smyth was a Republican, he had much influence over the negroes, but they wanted Brother Banks' body, and they wanted it badly. Souchon knew that the negroes would be in the dissecting room in a few minutes, so he quickly cut away the interesting parts of this world famous specimen from the remainder of the corpse, wrapped them in a cloth and passed the package out through a back window to one of the dead house attendants, who carried it to Souchon's waiting carriage. He then leaped out of the window and took another route to his carriage. He took the coveted specimen and hurried off at once to the college, "hugging closely," as

Souchon wrote, "my precious and ghastly companion."

Smyth could not hold the dead man's friends any longer, and one can imagine their shock and horror when they saw what was left of their hero—two legs, the viscera, and a left arm. Smyth was also surprised, but was glad to know that the specimen was saved. The negroes were satisfied with what remained of their friend and made as much over the remains as if they were his entire body.

After leaving the hospital, Smyth opened an office on Canal Street, but he did not like the life of a practitioner, and did not prosper in practice. He was Director of the Mint during the last ten years of his residence in New Orleans. While he was in office a fire broke out in the vault and there was considerable loss to the Government. Smyth was expected to pay for the damage, but as he did not have the means, his bondsmen had to satisfy the Government's claim. This, of course, greatly diminished his prestige among his friends.

In 1894 he retired and returned to his native Ireland. His American wife and daughter led a dreary life there, but Smyth was happy, and that was all that mattered to him.

Smyth also conducted some original research on the kidney, and was the author of two books, *The Collateral Circulation of Aneurysm*, and *The Structure and Function of the Kidney*.

He died on September 4, 1916, in his eighty-fourth year, at Donemana in the county of Tyrone, near his birthplace.

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## THE SUPPLY OF PHYSICIANS

It is very doubtful indeed if the intelligent population of this country has any concept of the number of doctors who actually are, directly or indirectly, working for national defense, giving a part or all of their time to the work necessary to maintain the required medical services. It is very doubtful indeed if the medical profession as a whole realizes that so many of their professional confrères are engaged in activities which remove them from civilian practice, or at least reduce the time that they are able to give to the civilian population. The largest number of physicians in this country who are giving unselfishly a goodly number of hours a week are the doctors who are engaged in making draft examinations. Of the approximately 165,000 practicing physicians in this country, 26,000 of them are making examinations for the Selective Service Boards. Of this 26,000 it is estimated that between 16,000 and 18,000 are spending many hours a week at this job.

As full time medical men, the Federal Government has made a tremendous demand upon the medical profession. In the Army the medical personnel has been increased to 9,800 doctors and more will be needed; the Navy refuses to divulge its figures but probably they are around 3,000. The United States Public Health Service has nearly 1,000 full time doctors in their organized service and their reserve. There are 1,000 Civilian Conservation Corps Camps in the United States that require from one to three physicians each. The National Youth Administration is making use of a considerable number of doctors. In addition to the Federal Government, war industries are putting on many full time physicians. The same thing applies to camp, shipyard, munitions plants and other types of construction work. It is obvious that there is a tremendous demand for the services of medical men. It is self-evident that a large number of doctors of medicine have been drafted for service in defense who otherwise would have gone into civil life. As a correlary to these statements, it is likewise self-evident that there is going to be difficulty in supplying additional physicians to the Army. It goes without saying and is a well known fact that already the civilian needs for physicians cannot be met in certain localities and that this will become a growing problem. Even at the present time hospitals by and large in the width and breadth of this country are suffering from lack of interns and the high quality of hospital service is being lowered thereby in many institutions.

There is no question but that many of the young men who have taken salary jobs, as for example in the Army, will want to retain such positions or to go into Governmental work after the emergency is over. This will still leave a large number of vacancies in the ranks of the medical profession after the present emergency.

The Central Government has spoken of a rehabilitation program. One wonders where the Washington authorities expect to get doctors to carry out such a program, granted doctors are available, which is dubious. Certainly it would be unfair and decidedly unjust to expect the doctors, as a national duty, to carry out plans for rehabilitation of the drafted men who have minor disabilities. If such a program is undertaken, positively and definitely the doctors should be paid for their work. They are now expected to give entirely too much time for services which are unpaid—to hospitals, indigent patients, draft board examinations and what not. Certainly there is no other profession that has given as large a percentage of its personnel to the country as has the profession of medicine. Most assuredly no other profession is giving as much gratuitous time to defense measures as is the medical profession. It would be too much to ask them to do more than they are doing.

## THE ARMY MEDICAL CORPS

Within the last few days there has been issued from the War Department a bulletin relative to the commissioning of officers in the United States Army. The bulletin has to do with officers in general but its application to the Medical Reserve Corps and to officers who are to go into the Medical Corps is especially interesting to the medical man.

One of the reasons that many medical men have not gone into the Army has been due to the fact that they were expected to enter as 1st Lieutenants irrespective of their age, their professional ability and their professional standing. Naturally a more mature physician who has spent some years in training to prepare himself for the practice of medicine does not wish to go in at the lowest rank that an officer can hold. He naturally feels that because of his skill and of his professional reputation that he is entitled to a rank commensurate with his knowledge and accomplishments. The Army has at last come to realize that it cannot expect the older man of excellent professional attainments to enter as a 1st Lieutenant, consequently regulations have been changed and it is now possible for a man to be appointed in the Medical Reserve Corps for the duration of the emergency with a relatively higher rank, the appointment to be made by the President.

Recently there has been set up a procurement division with five well known representatives of organized medicine who have as their chief function and purpose the procurement of medical men for services in the Army. Undoubtedly there will be an active campaign in a short time to obtain the older qualified medical man. The procurement division will have the opportunity of offering something at least commensurate with a man's ability, his training and his financial and economic responsibilities in civil life. In view of this change of procedure and in view of the fact that this procurement division is to function as a combined organized medicine-army undertaking, it is to be hoped that it will be able to obtain the additional medical men that the Army officials think are needed for the number of troops that are in service.

## REGIONAL ILEITIS

One of the types of infection which is often recognized with difficulty is that which occurs in the condition known as regional ileitis, defined as a non-specific granulomatous inflammation of the distal loop of the small intestine, involving usually the ileum in the region of the cecum, but occurring almost anywhere in the small bowel. The condition is one which is relatively rare and the cause of it is not known. It resembles closely tuberculous enteritis but at no time has the tubercle bacillus ever been

found by inoculations in laboratory animals Some are of the opinion that it may be a form of bacillary dysentery. This also has not been confirmed.

The disease commonly occurs as a low grade infection but acute ileitis is not uncommon; it is characterized by symptoms which resemble closely those of appendicitis. The pain occurs in the right lower quadrant of the abdomen, there is fever, leukocytosis, tenderness and rigidity, and the patient is operated upon with the anticipation of finding a diseased appendix, whereas it is discovered to be normal but the ileum a brilliant red and markedly injected. In these acute cases the diseased mass is untouched and returned to the abdominal cavity, and the patient usually returns to the former condition of good health.

The chronic type of regional ileitis is more common than the acute form; the patient will give a history of months or years of diarrhea, pain in the abdomen, gradual loss of weight and anemia. The movements, three to five a day, are semi-solid and contain pus, blood and mucous. With the bowel movement there is generalized abdominal pain, colicky in character, most pronounced in the right quadrant of the abdomen. As the disease progresses the chronically infected area gradually encroaches on the lumen of the bowel. Infection may result in the formation of fistulae which may go in any direction but often advance to the anterior abdominal wall. In the examination of the patient a mass may be felt, varying in size, which is tender and not movable.

The special examinations include a sigmoidoscopy which discloses no involvement of the visible colon. The x-ray examination is quite typical. A misshaped, irregular, narrow lumen with a marked delay in emptying time of the ileum, is seen.

If the disease progresses, then about 10 per cent of the cases of regional ileitis will go on to partial intestinal obstruction. Fortunately the condition is now more frequently recognized and operation is resorted to relatively early in order to cure the disorder. This operation must be radical. All the diseased portion of the bowel must be removed and excised well above the site of pathology. As a rule the resection is followed by relief but approximately 15 per cent of the cases will recur. Recurrence is very much less likely to happen if there is a radical excision so that the surgeon should be cognizant of the condition and the necessity for drastic surgery, whereas the medical man, who may not find the disease full blown with typical and characteristic signs and symptoms, should appreciate that there is this condition which may occasion extreme ill health, which may be one of the numerous causes for a low grade diarrhea and which, in its chronic phases, is ofttimes cured by an operation.

## HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

### SOUTHERN BAPTIST HOSPITAL
New Orleans

The regular monthly meeting of the Clinical Staff was held on Tuesday, November 25 at 8:00 o'clock in the Staff Room of the hospital. The following program was presented: "Case of Intestinal Obstruction with Ruptured Viscus" by Dr. William E. Marstaller; "Case Report of Hemolytic Jaundice" by Dr. E. A. Ficklen." The "death report" was the final business of the evening.

## TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

### CALENDAR

December 1. Board of Directors, Orleans Parish Medical Society, 8 p. m.

December 2. Eye, Ear, Nose and Throat Staff, 8 p. m.

December 3. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

Hutchinson Memorial Clinic Staff, 8 p. m.

December 4. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

December 8. Scientific Meeting, Orleans Parish Medical Society, 8 p. m.

December 9. Eye, Ear, Nose and Throat Society, 8 p. m.

December 10. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Touro Infirmary Staff, 8 p. m.
Women's Auxiliary, Orleans Parish Medical Society, Orleans Club, 3 p. m.

December 15. Hotel Dieu Staff, 8 p. m.
Clinico-pathologic Conference, Baptist Hospital, 8 p. m.

December 16. Charity Hospital Medical Staff, 8 p. m.

December 17. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Charity Hospital Surgical Staff, 8 p. m.
Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m.
The New Orleans Tuberculosis Hospital Staff, 8 p. m.

December 18. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

December 19. I. C. R. R. Hospital Staff, 12:30 p. m.
New Orleans Dispensary for Women and Children Staff, 8 p. m.

December 23. Baptist Hospital Staff, 8 p. m.

December 24. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

December 26. L. S. U. Faculty Club, 8 p. m.

December 31. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

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During the month of November the Society held one regular scientific meeting, and one joint meeting with the Salmon Committee on Psychiatry and Mental Hygiene. The programs were as follows:

Regular Scientific Meeting, held November 10, 1941.

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SYMPOSIUM ON MILITARY MEDICINE

1. The Medical Profession and Selective Service in Louisiana
   By Major Frank P. Rizzo, M. C., State Medical Officer, Louisiana Selective Service System.
2. Problems Confronting an Army General Hospital with Reference to Disposition of Cases
   By Lt. Colonel S. Charles Woldenberg, M. C., Chief of Surgical Service, LaGarde General Hospital.
3. Dental Deficiencies and Rehabilitation of Selectees
   By Dr. Leo J. Schoeny.
4. Medicine in Aviation
   By Lt. Commander James E. Fulghum, (M. C.) V. (G) U. S. N. R.

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At the scientific meeting held November 10, the Secretary read the names of the physicians nominated for office of the Orleans Parish Medical Society, and delegates to the Louisiana State Medical Society for 1942.

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THE GILLESPIE LECTURE

The joint scientific meeting of the Orleans Parish Medical Society which was to have been held on November 22 at the McAllister Auditorium, has been postponed until December 11. The necessity of postponing this was brought about by the inability of Dr. Gillespie to reach New Orleans on account of air travel. It should be noted that Dr. Robert Gillespie, who is the psychiatric specialist of the British Royal Air Force, will speak on "Psychoneuroses in Peace and War and the Future of Human Relationships" and Dr. Gillespie is giving this talk to some half a dozen of the more important cities in the United States.

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NEWS ITEMS

Dr. Charles A. Bahn presented a paper at the meeting of the American Academy of Ohpthalmology and Otolaryngology held in Chicago, October 22-23.

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Dr. Ansel Caine recently attended the meetings of the Anesthetists Travel Club in Montreal and the Associated Anesthetists of the United States and Canada in Boston.

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Drs. Edmund Connely, Walter J. Otis and T. A. Watters recently attended the meeting of the Southern Psychiatric Society at Nashville. Dr. Connely was elected vice-president of this society.

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Dr. Joseph A. Danna was recently named vice-chairman of the National Fight for Freedom Committee.

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Dr. T. J. Dimitry was recently awarded a medal and certificate by the Italian Ophthalmological Society of Mexico.

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Drs. Julian Graubarth and Jack Strange recently attended a meeting of the American Academy of Pediatrics in Boston.

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Dr. Frank C. Hava recently attended a meeting of the Inter-American Congress of Municipalities in Santiago, Chile.

Dr. Daniel M. Kingsley was elected president of the Big Ten Universities Club at a recent meeting of this group.

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Dr. Francis E. LeJeune was elected vice-president of the American Academy of Ophthalmology and Otolaryngology at its annual meeting in Chicago, October 22-23.

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Dr. Ambrose H. Storck presented a report on the use of antithyrotropic substances for preoperative preparation in hyperthyroidism at a recent meeting of the Surgical Investigative Society in Baltimore.

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## SELECTION OF OFFICERS

At a general meeting of the Society held Monday, November 10, 1941, the following nominations for Officers of the Orleans Parish Medical Society and Delegates to the Louisiana State Medical Society, 1942, were handed to the Secretary in accordance with the By-Laws:

PRESIDENT—Dr. Edgar Burns

Elected in 1941 to take office in 1942.

PRESIDENT-ELECT—Dr. H. B. Alsobrook

Endorsed by: Drs. Emmett L. Irwin, Roy B. Harrison, Edgar Burns, Daniel J. Murphy and C. Grenes Cole.

FIRST VICE-PRESIDENT—Dr. E. L. Leckert

Endorsed by: Drs. Roy Harrison, Theo. F. Kirn, Edwin H. Lawson and Daniel J. Murphy.

SECOND VICE-PRESIDENT—Dr. William B. Clark

Endorsed by: Drs. Roy B. Harrison, C. Grenes Cole, Paul Lacroix and Gilbert C. Anderson.

THIRD VICE-PRESIDENT—Dr. Daniel J. Murphy

Endorsed by: Drs. William B. Clark, Edgar Burns, George H. Hauser and George C. Battalora.

SECRETARY—Dr. Edwin L. Zander

Endorsed by: Drs. Edwin H. Lawson, Edgar Burns and E. L. Leckert.

TREASURER—Dr. A. V. Friedrichs

Endorsed by: Drs. Edwin H. Lawson, Walter E. Levy and J. A. White.

LIBRARIAN—Dr. Max M. Green

Endorsed by: Drs. E. J. Richard, A. V. Friedrichs and H. Ashton Thomas.

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## ADDITIONAL MEMBERS TO THE BOARD OF DIRECTORS

Dr. Paul G. Lacroix—Endorsed by: Drs. C. Grenes Cole, George H. Hauser, John G. Menville and Walter E. Levy.

Dr. John Menville—Endorsed by: Drs. E. L. Leckert, H. Ashton Thomas, A. V. Friedrichs and E. J. Richard.

Dr. J. O. Weilbaecher, Jr.—Endorsed by: Drs. Emmett L. Irwin, Edgar Burns and William B. Clark.

Dr. Edwin H. Lawson—Past President.

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## DELEGATES TO THE LOUISIANA STATE MEDICAL SOCIETY

Dr. George Battalora—Endorsed by: Drs. Geo. H. Hauser, Gilbert C. Anderson and Walter E. Levy.

Dr. C. J. Brown—Endorsed by: Drs. C. Grenes Cole, Edwin L. Zander and J. A. White.

Dr. Frank Chetta—Endorsed by: Drs. E. L. Leckert, Edwin L. Zander and C. J. Vedrenne.

Dr. William B. Clark—Endorsed by: Drs. F. R. Gomila, Roy B. Harrison and P. T. Talbot.

Dr. Aynaud F. Hebert—Endorsed by: Drs. Daniel J. Murphy, Max M. Green and Walter E. Levy.

Dr. Theo. F. Kirn—Endorsed by: Drs. C. Grenes Cole, Roy B. Harrison and N. J. Tessitore.

Dr. Edwin H. Lawson—Endorsed by: Drs. Gilbert C. Anderson, E. L. Leckert and P. T. Talbot.

Dr. E. L. Leckert—Endorsed by: Drs. C. Grenes Cole, George H. Hauser and J. A. White.

Dr. Walter E. Levy—Endorsed by: Drs. Paul G. Lacroix, Maurice Lescale and H. Ashton Thomas.

Dr. Daniel J. Murphy—Endorsed by: Drs. Paul G. Lacroix and J. O. Weilbaecher, Jr.

Dr. Joseph P. Palermo—Endorsed by: Drs. C. Grenes Cole, H. B. Alsobrook and Daniel J. Murphy.

Dr. Cassius L. Peacock—Endorsed by: Drs. H. B. Alsobrook, C. J. Wichser and P. T. Talbot.

Dr. E. J. Richard—Endorsed by: Drs. H. Ashton Thomas and John G. Menville.

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## TREASURER'S REPORT

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| Bank Balance, September 30, 1941 | $5,566.40 |
| October Credits | 402.47 |
| Total Credits | $5,968.87 |
| October Expenses | 615.75 |
| Actual Book Balance, October 31, 1941 | $5,353.12 |

Edwin L. Zander, Secretary.

# LOUISIANA STATE MEDICAL SOCIETY NEWS

## CALENDAR

### PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

| Society | Date | Place |
|---|---|---|
| East Baton Rouge | Second Wednesday of every month | Baton Rouge |
| Morehouse | Second Tuesday of every month | Bastrop |
| Orleans | Second Monday of every month | New Orleans |
| Sabine | First Wednesday of every month | |
| Second District | Third Thursday of every month | |

### FIFTH DISTRICT MEDICAL SOCIETY

The second meeting of the year was held at the Frances Hotel in Monroe, Monday, November 24. An excellent scientific program was presented which consisted of the following presentations:

Cancer of the Large Bowel, by Dr. C. F. Dixon, Mayo Clinic.

Pelvo-abdominal Tumors, by Dr. V. S. Counseller, Mayo Clinic.

Paroxysmal Rapid Heart Action, by Dr. George Herrmann, University of Texas Medical School.

The meeting was very well attended, not only by the local members but also by other members and officers of the State Medical Society.

### NEWS ITEMS

A committee composed of Drs. E. Perry Thomas, Randolph Lyons, and S. H. Colvin, Jr., is collecting money from the staff of Touro Infirmary for the purpose of erecting a suitable memorial to the late Dr. John A. Lanford. All members of the staff are asked to contribute in order to make available sufficient funds to erect a plaque to the memory of this distinguished physician.

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The United States Pharmacopeial Convention will reconvene at the Statler Hotel, Cleveland, Ohio, Tuesday, April 7, 1942.

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Swift and Company are offering a limited number of fellowships to universities and medical schools for research in nutrition. Those who are interested should address Dr. R. C. Newton, Research Laboratories, Swift and Company, Union Stock Yards, Chicago.

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Mayor F. H. LaGuardia, Director of the Office of Civilian Defense, has announced the appointment of Miss Marian G. Randall as Nursing Consultant in the Medical Division of the Office of Civilian Defense.

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The American Social Hygiene Association has announced that the Sixth National Social Hygiene Day will be held February 4, 1942.

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### SOUTHERN MEDICAL ASSOCIATION

The annual meeting of the Southern Medical Association was held in St. Louis. As usual the meeting was a pronounced success. An excellent scientific program was provided and the important social features were by no means neglected.

The following Louisiana physicians were registered: D. H. Abbott, New Orleans; John Adriani, New Orleans; Kotz Allen, New Orleans; T. Benton Ayo, Raceland; H. O. Barker, Alexandria; M. P. Barretto, New Orleans; Philip J. Bayon, New Orleans; Merrill C. Beck, New Orleans; Charles J. Bloom, New Orleans; F. F. Boyce, New Orleans; Shelton W. Boyce, Shreveport; Donovan C. Browne, New Orleans; W. H. Browning, Shreveport; Edgar Burns, New Orleans; B. I. Burns, New Orleans; Guy A. Caldwell, New Orleans; Albert E. Casey, New Orleans; Wm. B. Clark, New Orleans; Maurice Couret, New Orleans; Joseph S. D'Antoni, New Orleans; J. Preston Davis, Lake Providence; T. A. Dekle, Jonesboro; Vincent J. Derbes, New Orleans; Harold G. F. Edwards, Shreveport; S. Ernest Ellender, Houma; Ernest Carroll Faust, New Orleans; George D. Feldner, New Orleans; Robert L. Gordon, New Orleans; P. Graffagnino, New Orleans; M. T. Green, Ruston; W. F. Guerriero, New Orleans; D. P. Helms, New Orleans; A. A. Herold, Shreveport; E. D. Johnson, Monroe; Kenneth B. Jones, Shreveport; C. Barrett Kennedy, New Orleans; E. L. King, New Orleans; Jos. E. Knighton, Shreveport; Charles E. Koepp, Camp Claiborne; H. L. Lange, Camp Claiborne; Maxwell E. Lapham, New Orleans; Edwin H. Lawson, New Orleans; Lucien A. LeDoux, New Orleans; Maurice Lescale, New Orleans; Manuel B. Marquez-Escobedo, New Orleans; Rodney G. Masterson, Alexandria; W. R. Mathews, Shreveport; Chas. M. McGill, New Orleans; Alves Meira, New Orleans; Guzman A. Miguel, New Orleans; Emma Sadler Moss, New Orleans; M. B. Pearce, Alexandria; John L. Porter, New Orleans; L. J. O'Neil, New Orleans; Neal Owens, New Orleans; Joseph W. Reddoch, New Orleans; E. J. Richard, New Orleans; Ralph Riggs, Shreveport; A. G. Rojas, New Orleans; Frances C. Rothert, New Orleans; John T. Sanders, New Orleans; Wm. G. Sawitz, New Orleans; Joseph S. Shavin, Shreveport; Daniel N. Silverman, New Orleans; H. V. Sims, New Orleans; Jesse R. Stamper, Shreveport; Ray G. Stark, New Orleans; Lawrence H. Strug, New Orleans; J. C. Swartzweider, New Orleans; Harry E. Telbrock, New Orleans; Walker Thompson, New Orleans; C. J. Tripoli, New Orleans; M. T. Van Studdiford, New Orleans; Karl Vollmer, Davenport; H. W. E. Walther, New Or-

leans; T. A. Watters, New Orleans; Ford S. Williams, New Orleans; B. M. Wilson, Alexandria; Monroe Wolf, New Orleans; Roland Young, Covington.

Dr. Harvey F. Garrison, of Jackson, Miss., was named president-elect and will be inducted into office at the next meeting which will be held in Richmond, Va., in November of the coming year.

## NEW DRAFT EXAMINATION REGULATIONS

The many physicians making physical examinations of draftees will be glad to receive a circular letter, sent from the Selective Service here in Jackson Barracks, relative to the new plan of procedure in physical examinations. This new plan will reduce materially the amount of work required of the examining doctor and will relieve, very markedly, a great deal of routine paper work.

Examinations under this new plan will begin in December, according to Major Rizzo, the army doing first examinations at Camp Livingston, during the second week of December. It is very likely the army examining station in New Orleans will be in operation beginning December fifteenth. It is to be noted that the entire state must be operating under this new system not later than January.

That portion of Circular 43 explaining in detail change of procedure for conducting physical examinations is reproduced here in so far as it applies to the local board examining physicians and members of the medical advisory boards.

1. In order to determine which registrants are apparently qualified for I-A and those apparently qualified for I-A but who have a condition which causes some doubt as to their final qualifications for I-A, the examining physicians and examining physicians (dental) will make a cursory examination of the registrants sufficient to observe obvious conditions which would disqualify them for I-A. Such conditions would include: hernias, marked or symptomatic hemorrhoids, blindness in one or both eyes, musculo-skeletal deformities or injuries, varicose veins (marked), mental incapacity (insanity, morons, idiots, etc.), total deafness, dumbness, insufficient height (less than 60 inches) or for great height (above 78 inches), absence of all teeth or use of one or two plates.

2. The examining physician and examining physician (dental) will indicate in ink on page two of the Form 200 that the registrant is "qualified", "doubtful", or "disqualified" in the following manner:

If the registrant is found qualified for general military service delete "qualified for limited military service" and "disqualified for military service for reason of."

If the registrant is found qualified for general military service but there is some doubt as to that finding proceed as indicated in the previous paragraph but add the word "doubtful" after "qualified for military service."

If the registrant is found "qualified for limited military service" or "disqualified for military service" the examining physician will delete those portions of his certificate which are not applicable and will note the condition which is considered to be disqualifying after the finding in the certificate in the space provided therefor. He will then sign the certificate. If found to be "qualified" or "doubtful" the registrant will be sent to the Army Examining Board. The Form 200 will, of course, be sent to the Army Examining Board with the registrant. If the registrant is found to be disqualified the Form 200 will be filed in the registrant's cover sheet and the local board will classify the registrant in I-B or IV-F, whichever may be indicated.

3. In addition to this inspection by the examining physician and examining physician (dental), the examining physician will be called upon to take additional blood specimens for serologic tests in the event the first specimen taken by an Army Examining Board is *not* negative. Then, too, the examining physician and examining physician (dental) will be called upon by the local boards from time to time for advice concerning physical qualifications and the advisability of returning a registrant to an Army Examining Station a second time.

4. The Medical Advisory Boards will be asked from time to time to make special examinations for registrants with this request by the Army Examining Boards.

5. The local boards, examining physicians and examining physicians (dental) should bear in mind that registrants who are obviously unfit for general military service should not be sent to the Army Examining Board at this time as this will be an unnecessary inconvenience to the registrant and an unnecessary expense to the Government.

## THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The sixth annual meeting of The New Orleans Graduate Medical Assembly will be held March 2 through March 5, headquarters at the Roosevelt Hotel. The attendance has increased each year and from present indications the 1942 meeting will surpass all others. The popularity which the Assembly has enjoyed gives proof that the program offers the type of intensive post-graduate study the medical profession desires, presenting many new and outstanding features which are of interest to the specialists, as well as the general practitioner.

In keeping with the established policy, eighteen guest speakers will be on the program, each one prominent in medical circles. It is natural to assume that the program cannot be surpassed with a gathering of such eminent men. The Section on Cardiology will be represented by Dr. Frank N. Wilson, Director of the Heart Station at Univer-

sity, Ann Arbor, and Professor of Internal Medicine at the University of Michigan Medical School. The subjects he has chosen to speak on are "The Precordial Electrocardiogram," "What the Electrocardiogram Has to Offer in the Diagnosis and Management of Cardiac Diseases," "Curable Diseases of the Heart" and "Observations on Paroxysmal Tachycardia." The Section on Medicine will have two guest speakers, Dr. William H. Sebrell of Bethesda, Maryland and Dr. William B. Porter of Richmond, Virginia. Dr. Sebrell is Chief of the Division of Chemotherapy, National Institute of Health and Deputy Assistant Director for Nutrition, Office of Defense, Health, Welfare and Related Activities. His talks are on very timely subjects, namely, "Nutrition and National Defense," "The Clinical Importance of Vitamin B Complex Deficienses" and "The Diagnosis of Subclinical Deficiency Disease." Dr. Porter, Professor of the Theory and Practice of Medicine, Medical College of Virginia will talk on "Acute Pericarditis," "Complications of Staphylococcic Cutaneous Infections," "The Diagnostic Significance of Changes in the Hands" and "The Clinical Syndrome Associated with Intercapillary Glomerulosclerosis."

Dr. Russell S. Boles, President of the American Gastro-enterological Association, will contribute generously to the program. Dr. Boles is not only outstanding in his special field but has the ability to impart his knowledge. Dr. Harry P. Smith, Professor of Pathology, State University of Iowa College of Medicine, will conduct the Clinico-pathologic Conference in addition to his lectures which will be of great interest. Dr. Smith has done outstanding research work on shock, plasma proteins, blood volume, vital staining, bile salt metabolism, blood coagulation and vitamin K. Dr. Ross Golden, Professor of Radiology, Columbia University College of Physicians and Surgeons, New York, has wisley selected as his subjects "The Miller-Abbott Tube in the Treatment of Ileus, with Emphasis on the Technic of Insertion," "Diseases of the Small Intestine Demonstrable by Roentgen Examination" and "Disturbances in Small Intestinal Physiology Associated with Certain Deficiency States."

Also on the first two days of the program are Dr. Charles C. Dennie, Professor of Clinical Dermatology, University of Kansas School of Medicine, Lawrence-Kansas City; Dr. Raymond W. Waggoner, Professor of Psychiatry, University of Michigan Medical School, Ann Arbor; and Dr. Irvine McQuarrie, Professor of Pediatrics, University of Minnesota Medical School, Minneapolis, and University of Minnesota Graduate School, Minneapolis-Rochester. Each of these men are among the country's foremost medical educators and their participation in the meeting will play an important part in its success.

Information concerning the program for the last two days of the meeting will be given in the subsequent issue of the Journal. It is hoped that many doctors in the State of Louisiana will plan now to set aside a few days from their regular routine and attend the Assembly. The meeting offers an excellent opportunity to combine post-graduate work together with the establishment of good fellowship. The registration fee of ten dollars covers all features, including four daily luncheons as well as the smoker.

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## A CONDENSED REPORT ON THE STATUS OF AMERICAN MEDICINE AND THE OPERATION OF THE NATIONAL PHYSICIANS' COMMITTEE

On October 14, 1939—two years ago—the first letters and literature were mailed to physicians from the offices of N.P.C. The establishment of this agency is evidence of the fact that, at an earlier date and to a greater extent than any other group in the United States, American Medicine sensed and began to understand the need for and potential value of *Educational Propaganda.* (See Dr. Fishbein's statement, New Conditions Demand New Technics.)

In October, 1939, the Wagner National Health Bill was still before the Senate sub-committee on Education and Labor. The American Medical Association was awaiting trial in a Federal Court. Five officers of the A.M.A. and fourteen other physicians of Washington, D. C., were under Federal Grand Jury indictment on a charge of criminal conspiracy to restrain trade.

There were many physicians who were in doubt as to the soundness of our system of medical practice. A powerful lobby, headed by professional welfare workers and with powerful friends at court, was effectively active in state capitals and in Washington. Proposals were made which would have revolutionized the practice of medicine in the United States, including the placing of the distribution of medical care in the hands of laymen or lay groups.

The National Physicians' Committee was established. Three well-defined tasks were undertaken:

1. Clarifying the basic issues to a point of understanding for and within the profession;
2. Promoting the extension of the distribution of high quality medical care;
3. Educating the public to a point of understanding on the basic meaning of and the effective results from our system of independent medical practice.

### Widespread Cooperation

The establishment of N.P.C., supplementing the efforts of existing medical organizations, stimulated medical journals in almost every state to the publication of articles and editorial comment on or in connection with the importance and effectiveness of our system of distribution of medical service.

As a new agency it aided in creating widespread discussion of this vital issue within county and state medical society groups. These discussions led to a clarification and understanding of the issue and toward unifying the profession. They stimulated local medical societies to undertake the providing of medical care on a cooperative or a prepayment basis. More than two hundred of these plans have been undertaken; two of them, the California Medical Service and the Michigan Medical Service, on the basis of state wide operation under medical association sponsorship.

These efforts have been vitally important. They have provided medical care for many thousands of people in lower income groups. More important, they have provided conclusive evidence of—

the fact that the medical profession has been and is fully aware of and alive to its grave and exclusive responsibility; namely, the providing of the highest possible medical care to all the people at the lowest possible cost. Further, and of even greater value, the experimental efforts have demonstrated that there is no panacea for the problem of medical care. The two vital factors remain,—the doctor and the patient.

### Educational Efforts

Early in 1939, N.P.C. began its educational efforts. Approximately one million letters were mailed; a series of booklets and reports were issued and distributed to a total of approximately two and one-half million copies. These included The Achilles Heel of American Medicine; the Minutemen of American Medicine; The Priceless Heritage; Statement of Post-election Position, Program and Policy; The Two Essentials for American Medicine; and New Conditions Demand New Technics.

Two two-page advertisements in color were published in the Saturday Evening Post. Full page advertisements were published in nearly one hundred daily newspapers, under local medical society sponsorship.

These efforts were all concentrated on carrying through to the general public an understanding of the outstanding fundamental achievements of American Medicine, such as "The Highest Level of Health Ever Known," and the basic causes of the unusual achievements.

### Is the Danger Past?

On September 24, Mr. Charles A. Togut, speaking before the National Fraternal Congress of America, warned that "state or governmental medicine will paralyze the country's fifty million voters and destroy the private practice of medicine. He said:

"National Defense has catapaulted the issue of the 'Nation's Health' onto the front page of every newspaper and onto the burning wires of every radio transmitter. As in nations ruled by the sword, malicious propagandists are piercing the heart of our incomparable system of medical care.

"The Congress of the United States is weighing the destiny of our peoples and of our doctors with numerous authoritarian legislative medical measures. The battle of the century, the government versus the American Medical Association, is but a prelude to the conditioning processes of a National Planned Medical Care Program, unless the American peoples, the doctors, the industrialists, the leaders of labor and capital can smother the most powerful propaganda factory in the world and inaugurate fighting means and methods to unite the leaders of medicine and industry in a progressive Health Insurance Movement."

Today, there is greater cause for fear and a greater need for constant and intelligent vigilance than at any previous time if the independence of medicine is to be preserved.

### Causes

Actual needs of war participation are making necessary revolutionary changes in our social, industrial and economic structures.

It is reliably estimated that, during the short period of war effort, more than 3,400 new manufacturing plants have been built or are in the process of building, at a total cost in excess of thirty-nine hundred million dollars ($3,900,000,000.00). Of this new productive equipment, the United States Government has financed or is financing the construction of 429 gigantic plants at an over-all cost in excess of twenty-five hundred million dollars ($2,500,000,000.00). It is estimated that, during the next twelve months, these investments for new plant expansion will total more than 7,000 million dollars.

Tens of thousands of small business enterprises will be liquidated. An actual need has been created for a centralizing of production and the establishment of government controls and operations never before contemplated or even imagined in the United States.

The first obligation—the first responsibility—of the medical profession and each individual physician is to make a commensurate contribution to the defense effort. And it must be kept constantly in mind that, under any circumstances, ultimately medicine must serve under and mesh with the new conditions which will finally emerge from these revolutionary changes.

### The Greatest Danger

Today, in the United States, there are more people gainfully employed, at higher rates of pay, than at any previous time. These generally larger earnings are beginning to influence more prompt payment for medical care. Shortsighted doctors, freed from a part of the sense of financial inse-

curity, are prone to forget or to ignore the more important issues involved.

It is true that this lessening of unemployment has removed one of the basic cause factors which led to the determined drive for the state control of medical service. However, the new advocates of "state control" and new factors demanding greater centralization of governmental authority have actually increased the danger. It is possible that the solution of the medical independence problem will necessitate approaching it from a broader base.

### The New Responsibility

Now, there is the opportunity and the responsibility for medicine to take the lead in acknowledging the present need, cheerfully assuming its share of the immediate task—on the basis of the emergency—but, at the same time, building the safeguards which will insure ultimately a continuation of the American Way of Life and, incidentally, the independence of the medical profession.

### The Proven Method

There is but one way. Its potency has been demonstrated by American physicians—*Educational Propaganda.*

The methods and the preliminary educational efforts of the physicians have been unusually—in some respects spectacularly—effective. The methods and the media can be indicated. It is as impossible to explain the "why" of the effectiveness as it is to explain the spiritual factors which enter into the curing of disease. The elements are as subtle as those of the "doctor and patient relationship."

There can be no question but that, if 150,000 physicians fully understood the N.P.C. purpose and fully comprehended the nature and subtlety of its operation, each and every one would desire to participate in its efforts.

### Finances

The policy of the National Physicians' Committee has been to carry forward effectively segments or parts of a broad program. The extent of its activities has been determined by funds available for operation.

To carry forward all phases of a carefully conceived and well defined plan of nation-wide effort will require substantial funds yearly, and for a minimum period of three years.

It is now fully understood that the carrying on of this vitally important work is the direct responsibility of the medical profession.

During the past two years, individual physicians contributed to the N.P.C. efforts to the extent of approximately $100,000. Individual local medical societies have made systematic canvasses of the membership of their societies respectively, and have provided financial support in amounts ranging from $500 to, in one instance, more than $3,000. Forty-two and two tenths per cent of N.P.C. funds have come from sources other than physicians.

It has been demonstrated that—

a. The hit-or-miss method is too slow—is wasteful—and may jeopardize final results through inadequate funds.

b. This method places the responsibility solely on the shoulders of an enthusiastic minority.

c. Systematized action by an official committee of the local medical society will—

1. Produce adequate funds,
2. Spread the load uniformly,
3. Provide not only financial support but the interest and cooperation of the rank and file of physicians.

On October 17, 1941, a check in the amount of $2,635.47 was received from the N.P.C. Committee of the Hennepin County (Minneapolis) Medical Society. Accompanying the letter of transmittal was a list of 224 physicians who had participated in the effort.

Throughout the United States, large local medical groups—including Los Angeles and Alameda Co., (Oakland) Cal.; New Orleans, La.; Houston and Dallas, Texas; Dayton, Ohio; Memphis, Tenn.; Lycoming, Pa.; St. Paul and Rochester, Minn.; have established special operating committees to systematize and unify support for carrying forward, during the coming period of stress, the vitally important educational work of N.P.C. These cooperating groups are looking forward to similar efforts by every local society in every state.

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## CIVILIAN DEFENSE

Dr. George Baehr, Chief Medical Officer of the Office of Civilian Defense, Washington, D. C., has announced the appointment of a subcommittee of the Advisory Board of the Medical Division, Office of Civilian Defense, to prepare recommendations on protective procedures for hospitals in the event of belligerent action.

Dr. Robin C. Buerki, dean of the Graduate School of Medicine and director of hospitals of the University of Pennsylvania, Philadelphia, a member of the Medical Advisory Board, is chairman of the new subcommittee and the members are:

Dr. Willard C. Rappleye, commissioner of hospitals, New York City.

Dr. Asabel J. Hockett, superintendent of Touro Infirmary, New Orleans.

Dr. Anthony J. J. Rourke, medical superintendent of Stanford University Hospitals, San Francisco.

Dr. Joseph Turner, director of Mount Sinai Hospital, New York City.

Dr. Huntington Williams, commissioner of health of Baltimore.

The subcommittee held its first meeting at the Hotel Commodore, New York, November 8. With Dr. James M. Mackintosh, former Chief Medical

Officer of the Scottish Ministry of Health, as a guest to advise the group, measures for preventing or minimizing damage to buildings, handling of casualties, evacuation, provision and protection of supplies, and training of personnel for specific duties in case of bombing were discussed in detail. The basis for discussion was a study made by a committee of the American Hospital Association on physical defense of hospitals, of which Dr. Hockett is chairman. It is expected that a report will be issued jointly by the hospital association committee and the committee representing the Office of Civilian Defense.

Dr. Mackintosh also conferred with the staffs of the medical and civilian protection divisions of the OCD at the Washington headquarters, November 7, describing in detail Britain's organization of its protective services, its early mistakes and the measures taken to correct them.

The basic organization for rescue work in a given area consists of three essential groups with a central control, police, rescue and fire services, ARP control and medical service.

One of the early mistakes was the belief that it was imperative to have first aid workers on the scene of a bombing immediately. Bitter experience showed that injured persons were usually buried under rubble and glass of their homes and that hours of work by the demolition and rescue squads were often necessary before first aid could be given.

Dr. Mackintosh emphasized the necessity for a central ambulance control. Ambulances are dispatched only by the central control and are not allowed to move from a bombed area until routes to hospitals have been surveyed. To stop "panic calls" from individuals, private telephones are now cut off the moment an air raid warning sounds.

First aid posts, in addition to their obvious function of caring for the injured, are invaluable as rendezvous for rescue workers, physicians and nurses as well as the general population, who may become lost in the blackout, frightened, choked and blinded by dust, he said. In the first aid post the workers can clean up, have a cup of tea and return refreshed to their activities.

### Appointment of Regional Medical Officers

The Office of Civilian Defense has organized on a regional basis, with regions corresponding to the U. S. Army Corps Areas. A regional director has been appointed for each region with headquarters in the same city in which the corps area headquarters are located. Regional medical officers have been appointed as follows:

First Civilian Defense Region: Dr. Allan M. Butler, 101 Milk Street, Boston.

Second: Dr. H. Van Zile Hyde, 111 Eighth Avenue, New York City.

Third: Dr. W. Ross Cameron, 400 Cathedral Street, Baltimore.

Fifth: Dr. William S. Keller, 425 Cleveland Avenue, Columbus, Ohio.

Eighth: Dr. Witten B. Russ, Majestic Building, San Antonio, Texas.

Ninth: Dr. Wallace Hunt, 233 Sansome Street, San Francisco.

These physicians have been commissioned as senior surgeons in the U. S. Public Health Service.

### Duties of the Local Chief of Emergency Medical Services

In order to expedite the organization of the Emergency Medical Services and provide for their effective administration, it is important that each local Civilian Defense Council appoint without delay a local Chief of Emergency Medical Services. He should be an outstanding medical leader and should be selected in consultation with the State Defense Council, the local Medical Society, and the local Health Officer. To facilitate the integration of all local medical resources into a comprehensive program for civilian protection, the local Chief of Emergency Medical Services should be assisted by a Medical Advisory Council, consisting of the local Health Officer, and experienced hospital executive, and representatives of the local Medical Society, the local nursing profession, the American Red Cross, and any participating voluntary agencies.

Under the administrative authority of the local Director of Civilian Defense the duties of the local Chief of Emergency Medical Services are:

1. To determine the scope of the activities of all official and voluntary organizations which are to participate in the emergency medical program of civilian defense, to integrate these organizations into the comprehensive local program, and to assist them in expanding their activities to the limit of their resources in personnel and equipment.

2. To assist hospitals in the locality to organize, equip and train Emergency Medical Field Units as outlined in Medical Division Bulletin No. 1, "Emergency Medical Service for Civilian Defense."

3. To inspect and select sites for the establishment of Casualty Stations.

4. To make a spot map of the locality, indicating the locations of hospitals, appropriate sites for Casualty Stations, depots for storage of stretchers, blankets and collapsible cots, and the locations of rescue squads. The map should indicate the number of Emergency Medical Squads in each hospital. Copies of the map should be supplied to Control Centers, Police and Fire Departments, Health Department, local Red Cross Chapter, State Defense Council, Regional Director, Regional Medical Officer and to all cooperating hospitals.

5. To plan and establish adequate transportation service for casualties and medical personnel in consultation with local government departments, American Red Cross and voluntary agencies.

6. To arrange with the local Control Authority for field drills of Emergency Medical Units and Squads in collaboration with police and fire auxiliaries, disaster relief and canteen services of the American Red Cross, ambulance transport service and other civilian defense units and to supervise such drills.

7. To make an inventory of hospital beds in the locality and of the possibilities for emergency expansion in bed capacity.

8. To assist the authorities charged with preparing plans for evacuation in making an inventory of hospitals, convalescent homes, sanatoria, hotels and other structures within a radius of 50 to 100 miles which might be used as base hospitals to which patients in city institutions could be evacuated.

9. To assist the local Central Volunteer Bureau in establishing courses for volunteers in the field of health, medical care, nursing and related activities.

10. To stimulate recruitment of volunteers for Nurses' Aide courses of the American Red Cross, assist the local Red Cross chapter in establishing Training Centers for Volunteer Nurses' Aides at appropriate hospitals and assist the Red Cross placement bureau in placing Nurses' Aides with hospitals, clinics, health departments and field nursing services after completion of training.

11. To stimulate and guide extension of First Aid training courses as widely as possible among the local population through the American Red Cross and other official and voluntary agencies.

12. To stimulate and guide industrial plants, business establishments and government bureaus in the locality in the training and organization of effective First Aid Detachments among the employees.

13. To collaborate with state and local health departments and through them with the Regional Sanitary Engineer in a comprehensive program for the protection of the community against emergency sanitation hazards.

14. To collaborate with local and State Defense Councils, Office of Civilian Defense, Federal Security Agency, Children's Bureau and other local State and Federal authorities in the preparation of plans for evacuation, with particular attention to the medical needs of the population under such circumstances.

15. To keep the community and particularly the members of the health and medical professions and the participating official and voluntary organizations informed of the plans and activities of the local Emergency Medical Services.

George Baehr, M. D.,
Chief Medical Officer.

## HEALTH OF NEW ORLEANS

The Bureau of the Census, U. S. Department of Commerce, has reported that for the week ending October 11, there were 133 deaths in the City of New Orleans, divided 81 white and 52 negro, and of this total there were 11 children under one year of age; six white and five negro. These figures are practically the same as for the previous week, reported last month. The following week there were fewer deaths in the city than have occurred for a long time. There were only 103 people in the city expiring in this week; 59 of which deaths were in the white race and 44 in the negro. There were 12 infant deaths this week, divided equally between th two races. As would be expected, there was considerable increase from the very low level of the previous week, for the week of October 25. Of the 139 deaths in the City of New Orleans this week, 88 were white people, 10 of whom were children under one year of age. There were 51 negro deaths, eight of whom were infants. The death figure in New Orleans for the week of November 1 obtained the lowest level that has been achieved for many years. The average number of deaths for this particular week is 142, whereas actually in 1941 in the week closing November 1, there were only 94 deaths, divided 55 white and 39 negro; six of the deaths being in white children and four in negro infants.

The death rate in New Orleans so far for the year 1941 is well below that of the previous year. As a matter of fact there have been 500 less deaths in the city this year than in the corresponding time last year.

## INFECTIOUS DISEASES IN LOUISIANA

The morbidity report of the Section of Epidemiology of the Louisiana State Board of Health for the week which closed October 18, the forty-second week of the year, showed syphilis, as is customary, leading all other reportable diseases, with 478 cases listed during this particular week. Other diseases occurring in numbers greater than ten include 36 of gonorrhea, 22 of diphtheria, 16 of pneumonia, 14 of pulmonary tuberculosis, 13 of cancer and 10 of malaria. One case of poliomyelitis was reported this week and four cases of undulant fever. It is interesting to note that four parishes reported one case each of typhus fever. For the week closing October 25 there were listed 247 cases of syphilis, 68 of hookworm, 59 of gonorrhea, 32 of pulmonary tuberculosis, 20 of pneumonia, 14 of cancer, and 10 of typhus fever. The typhus fever cases were scattered throughout the state in many different parishes. One case of poliomyelitis was found in Vermilion Parish. The forty-fourth week was quite a remarkable week; there were only five diseases listed in numbers greater than ten. Of these diseases syphilis led with 280 cases. There were 18 cases of gonorrhea, 16 of pulmonary tuberculosis, and 10 each of typhus fever and malaria. The ten cases of typhus fever were, in reality, only seven as three of these had been previously reported but were transferred to Charity

Hospital for treatment. There were three cases of undulant fever reported this week. For the forty-fifth week of the year, ending November 8, there were tabulated 316 cases of syphilis, 55 of gonorrhea, 22 of pulmonary tuberculosis, 14 of pneumonia, and 13 of influenza. It is interesting that in this particular week, of the common contagious diseases of childhood, there were listed only one case of chickenpox, nine cases of diphtheria, no cases of measles, four cases of scarlet fever, and six cases of whooping cough. In this week there were reported five cases of typhus fever.

## NEW MEDICAL OFFICER EXAMINATION

The Government is faced with a critical need for physicians to serve as Associate Medical Officers in the Federal civil service in such agencies as the Veterans Administration, the U. S. Public Health Service, the Indian Service, and others. In August of 1940, the Civil Service Commission announced an examination to fill Medical Officer positions of various grades in the Government service. This examination has been closed and reannounced with certain modifications. Applications will be accepted until further public notice.

The examination covers three grades: Associate Medical Officer, $3,200 a year; Medical Officer, $3,800 a year and Senior Medical Officer, $4,600 a year. Applicants for the Medical Officer grade must have graduated from a medical school (Class A) since May 1, 1920, and for the Associate grade, since May 1, 1930. No specified time limit is set for graduation for the Senior grade.

No written test is required. Applicants are rated upon their education and experience. The maximum age limit for all grades has been raised to fifty-three. Announcements and application forms may be obtained at any first- or second-class post office, or from the Civil Service Commission, Washington, D. C.

## UROLOGY AWARD

The American Urological Association offers an annual award 'not to exceed $500.00' for an essay on the result of some specific clinical or laboratory research on urology. The amount of the prize is based on the merits of the work presented, and if the committee on Scientific Research deem none of th offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

Essays shall be in the hands of the Secretary, Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Conn., on or before April 1, 1942.

## HOSPITAL FOR SALE

There is a hospital for sale at Big Timber, Montana: ten rooms, furnished, with equipped surgery. The building is entirely modern with hardwood floors and concrete basement. Hospital can be used for living quarters and office by resident surgeon, if desired.

The city is located in the center of a rich farming and stock raising region with nearby "Dude" ranches and some of the finest hunting and fishing in the West.

Physicians of this community during the past thirty-five years have had paying practices far above the average. This hospital was built by one of them in response to a real need. His death and that of another surgeon makes this opportunity available. For further particulars write to the executrix, Mrs. A. F. Rice, 814 West Park Street, Butte, Montana.

## WOMAN'S AUXILIARY

### Louisiana State Medical Society

### OFFICERS

President—Mrs. Aynaud Hebert, New Orleans.

President-elect—Mrs. Clarence B. Erickson, Shreveport.

First Vice-president—Mrs. H. O. Barker, Alexandria.

Second Vice-president—Mrs. Cecil O. Lorio, Baton Rouge.

Third Vice-president—Mrs. B. L. Cook, Minden.

Fourth Vice-president—Mrs. R. W. O'Donnell, Monroe.

Treasurer—Mrs. Daniel J. Murphy, New Orleans.

Recording Secretary—Mrs. Rhodes Spedale, Plaquemine.

Corresponding Secretary — Mrs. Charles R. Hume, New Orleans.

## RAPIDES PARISH

Mrs. Aynaud Hebert, state president, reports a very interesting visit to Alexandria. She attended the Auxiliary meeting and was greatly impressed with the fine attendance and the outstanding work being done. Before many more days roll by she will continue her state tour. She promises to visit every parish during the year.

## ST. MARY PARISH

The Auxiliary to the St. Mary Parish Medical Society held its biannual meeting at the home of the president, Mrs. T. E. Dreher.

During the business session, it was decided to continue sending cards of appreciation to the Doctors on Doctor's Day. Arrangements are being made to send five dollars to the base hospital at Camp Blanding for the use of convalescents since the majority of St. Mary Parish soldiers are stationed there.

Mrs. Harold Metz read an interesting article on "The Lesson of the Old Sock" by Vicki Baum. Mrs. T. E. Dreher read an excerpt of Dr. Ralph Fenton's "The Task of the Auxiliary." Mrs. D. J.

Daspit read a poem entitled "Hay Fever," and an anecdote "Loses By a Throat."

Following the program delightful refreshments were served by the hostess, Mrs. Dreher.

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SECOND DISTRICT

The Auxiliary to the Second District Medical Society held the October meeting at the home of the president, Mrs. P. P. LaBruyere, Marrero. The home was beautifully decorated with autumn flowers.

The state president, Mrs. Aynaud Hebert, was a guest and outlined the work for the current year.

The Second District Councilor, Mrs. Roy B. Harrison, was present and as usual made timely and helpful suggestions. To Mrs. Harrison, is due much of the credit for the growth of the Auxiliary.

The state chairman, Mrs. P. A. Donaldson, who is a Second District Auxiliary member, gave a resumé of the programs for the monthly meeting. Mrs. Donaldson stressed the importance of well planned programs to increase attendance.

The Membership Chairman, Mrs. J. J. Massony, reported three new members.

Red Cross sewing for the month, which consisted of about fifty operating gowns, was distributed among members.

Refreshments were served after the meeting.

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Your president begs to call to the attention of each parish auxiliary the importance of two new projects, namely; the Red Cross and the Indigent Widows' Fund. Both are important as well as outstanding. She asks that all Red Cross Chairmen keep accurate records of all work being done, so that Mrs. F. Creighton Shute can have a complete report for the board meeting. The following letter speaks for itself.

Dear Auxiliary President:

You have been informed by Mrs. Hebert, State President of the Auxiliary, that the work for indigent widows of physicians will occupy an important part in the program for 1941-42.

In Orleans Parish this has proved an interesting and worthwhile activity for several years. It is financed by the Commemoration Fund which has been built up in this way: On the death of a member of the Orleans Parish Medical Society or of the Auxiliary, instead of flowers, a card is sent to the family stating that a donation has been placed in the Commemoration Fund in memory of the deceased and five dollars is transferred to the Commemoration Fund from the General Fund.

In like manner individual members of the Auxiliary make donations of any desired amount in memory of loved ones whether of the profession or not, and cards are sent the families by the fund chairman. Many people commemorate happy events in this manner, too.

We realize that in smaller auxiliaries it would require some time to build up a fund sufficiently large to be of practical use. But it is proposed that a general fund be created by donations from all auxiliaries from which the smaller groups may draw when in need. This too will require time to accumulate but as the demands on the fund will probably not be many, a working sum will build up fairly rapidly.

The fund is administered in a manner that will assure all possible privacy to the recipient. The name is known only to the person giving the information and the chairman making the investigation. The chairman refers to the person only by case number when discussing the need with her committee or the board. In this way the recipient is spared as much embarrassment as possible.

Mrs. Hebert will no doubt be ready to discuss this new project with you when she visits your auxiliary and meantime, if I can help you in any way, please write me.

Sincerely yours,
Mrs. James W. Warren, Chairman,
Indigent Widows' Fund.

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Respectfully submitted,
Mrs. Jules Myron Davidson, Chairman,
Press and Publicity.

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# BOOK REVIEWS

*A Primer for Diabetic Patients*: By Russell M. Wilder, M.D., Ph.D., F.A.C.P. 7th ed. rev. Philadelphia, W. B. Saunders Co., 1941. Pp. 184. Price $1.75.

Numerous previous editions of a book usually carry their own recommendations. Since 1921, Dr. Wilder has been developing a primer for diabetic patients to be used as a link between patient and practitioner. This tiny volume assists the doctor by answering the patient's questions regarding complications in the diabetic, namely those of pregnancy, visual disturbances, gangrene and tuberculosis. It teaches the patient the Benedict and Gerhardt test and outlines the exact method of insulin administration and care of the instruments used. The author has arranged diet lists which may quickly be adapted to the patient's needs, at the same time allowing for a wide choice of foods. Rules for the control of a patient in diabetic coma are detailed for the use of the practitioner who treats this condition infrequently.

This edition differs from the sixth edition as Dr. Wilder here advocates the use of protamine zinc insulin and regular insulin to be administered simultaneously from a singleluer. In this way, a

single injection can be well controlled by two premeal urine specimens daily.

This is a book to be recommended for the intelligent patient who is willing to weigh his food and earnestly try to understand his own case. The physician will find the book valuable in instructing the patient regarding his affliction.

TRAVIS WINSOR, M. D.

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*Synopsis of Diseases of the Heart and Arteries*: By George R. Herrmann, M.S., M.D., Ph.D., F.A.C.P. 2nd ed. St. Louis, C. V. Mosby Company, 1941. Pp. 368. Price $5.00.

A second edition is the best compliment the profession can offer an author. We gain from revision in that the second product usually does, as in this instance, benefit from the realization of certain deficits of the original.

An extensive thoroughness in synopsis is exemplified in 468 pages of review and constructive analysis by George Herrmann. Some may gather the impression that the work is too all inclusive, actually it impresses the reviewer with the increased knowledge available on cardiovascular disease.

There are many elementary treatises but one must appreciate the fact that this book is designed for and most valuable to the general practitioner and is not intended as a reference for the finished internist or cardiologist. The student benefits from Doctor Herrmann's experience as a teacher; he has appreciated their need for a practical review of their preclinical teachings.

The chapter on military cardiovascular examinations and interpretations, the references throughout, make one appreciate the cooperation of an excellent author and publisher in making available a book which reviews the literature to the months prior to publication.

GORDON MCHARDY, M. D.

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*An Introduction to Medical Science*: By William Boyd, M.D., M.R.C.P. (Edin.), F.R.C.P. (Lond.), Dipl. Psych. F.R.S. (Canada). Philadelphia, Lea & Febiger, 1941. Pp. 358. Price $3.50.

The nurse and those allied to medicine in technical or premedical capacities are all too frequently referred to textbooks far beyond their comprehension. This error has resulted in their failure to gain practical knowledge valuable to them and to those they assist and has left them bewildered in a field they should feel thoroughly familiar with.

As a nursing text Doctor Boyd's work corrects an appreciable deficit. The reviewer is pleased with the simplicity which brings the pre-clinical sciences down to lay understanding, renders them interesting and then briefly but thoroughly applies them to the practice of medicine.

It should be placed before every hospital executive and nursing school director. It should especially be reviewed by the physician lecturing to nurses. The undergraduate and postgraduate nurse will find it a valuable reference and library addition.

Dr. Boyd is to be complimented on the call for a second edition. He has brought the text up to the present day knowledge on subjects pertinent to nursing.

GORDON MCHARDY, M. D.

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*Roentgen Technique*: By Clyde McNeill, M.D. 2nd ed. Springfield, Illinois, Charles C Thomas, 1941. Pp. 329; illus. Price $5.00.

This well known volume on roentgen technic has been revised and new material on fluorography, fluoroscopy, cholangiography, laminagraphy, and pineal localization has been added. The book is divided into four parts: Part I considers the head; Part II, the extremities; Part III, the trunk; and Part IV, exposure technic. The small section on definitions is concise and clear and includes the usual terms referable to x-ray technic.

All of the usual and most of the unusual positions and procedures employed in radiography are discussed. Each position is thoroughly and clearly explained by the text. On the opposite page are reproductions of a photograph of the patient in the described position and a diagrammatic drawing with labels of the resulting radiograph. The section on bone development consists of drawings illustrating the time of appearance and ossification of the epiphyses. Diagrams of the accessory bones of wrist, hand, foot and ankle are especially valuable as a source of reference. The bibliography of original articles describing unusual radiographic technics and positions are distributed throughout the book and conveniently placed.

In general, few books on roentgen technic are equal to this volume and not one is superior to it. It is a necessity for every roentgen laboratory and of considerable value to anyone interested in radiography.

J. N. ANÉ, M. D.

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*Elimination Diets and the Patients Allergies*: By Albert H. Rowe, M.D. Philadelphia, Lea & Febiger, 1941. Pp. 264. Price $3.00.

The low index of reliability and specificity of skin tests to food substances in clinical allergy makes the incrimination of dietary offenders by that approach difficult. For many years the author has been an advocate of "elimination diets" as a method of studying patients in whom this type sensitivity is suspected; he has developed many followers.

This book is a result of several years of recent experience with the use of elimination diets. Because of the high incidence of cereal offenders, the cereal-free elimination diet has been recommended as an approach to the problem, in place of the former five diets, four of which contained cereal grains. Full indications and directions for its use

are presented. Other types of elimination diets and special diets for unusual cases are also included, together with menus to help the patient.

Although the main emphasis is on food allergy, some attention is given to clinical allergy in general.

STANLEY COHEN, M.D.

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*Abdominal Surgery of Infancy and Childhood*: By William E. Ladd, M. D., F. A. C. S., and Robt. E. Gross, M. D. Boston, W. B. Saunders Co. 1941. Pp. 455. Price $10.00.

This book fulfills a long needed want in American medical literature. As far as I am able to learn, this volume very probably represents the first book on this subject ever written in America. The authors have accordingly given to the profession a fine contribution of great value—a contribution which is devoted only to that field of pediatric surgery involving the abdomen.

The book is based principally upon the experiences of the surgical staff members of the Boston Children's Hospital, an experience that covers a period of the last 25 years. The contributions of other authors in this field are appropriately recognized throughout, and due credit is given in bibliographies at the end of each chapter.

The authors rather appropriately present, and adequately discuss not less than thirty-six subjects, each embracing one chapter, representing the known surgical diseases of infancy and childhood which involve the abdomen. Thus, congenital hypertrophic pyloric stenosis, intestinal obstruction, congenital atresia and stenosis of the intestine and colon, intussusception, congenital megacolon, appendicitis, hernia and many other conditions—some more or less rare—are given adequate consideration from every important viewpoint. The diagnosis, pathology and especially treatment of these various surgical diseases constitute very important phases of each chapter.

Preoperative preparations and care, and postoperative treatment in surgical diseases, especially of infancy, are important factors very well covered by the authors. These particular subjects are so markedly different from what the surgeon is accustomed to in the adult, that their consideration in the instance of each disease makes this volume, in my opinion, that much more valuable. The style used by the authors is good and rather easy; and the volume is rich in good illustrations, many of which are photographs of cases treated by the staff, and others of which are illustrative diagrams.

Many rather rare surgical diseases of the abdomen seen in infancy and childhood stimulate an unusual interest. Their presentation and discussion makes this volume more complete. In general, I feel this book should form part of every general surgeon's library as it contains a wealth of information that would take much time to gather from the various sources to which one would otherwise have to refer. Accordingly, I would like to take this opportunity of recommending it to every general surgeon, who will often find many of his problems in this field adequately answered.

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## PUBLICATIONS RECEIVED

Bruce Publishing Company, St. Paul: The Treatment of Infantile Paralysis in the Acute Stage, by Elizabeth Kenny.

Elsevier Publishing Company, Inc., New York City: The Biologic Fundamentals of Radiation Therapy, by Friedrich Ellinger, M.D.

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Science Press Printing Company, Lancaster, Pennsylvania: Rheumatic Fever in New Haven, edited by John R. Paul, M.D.

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